

AD-A152 464

PROCEEDINGS: USER'S WORKSHOP ON COMBAT STRESS HELD AT  
FORT SAM HOUSTON TX. (U) ACADEMY OF HEALTH SCIENCES  
(ARMY) FORT SAM HOUSTON TX HEALTH C.

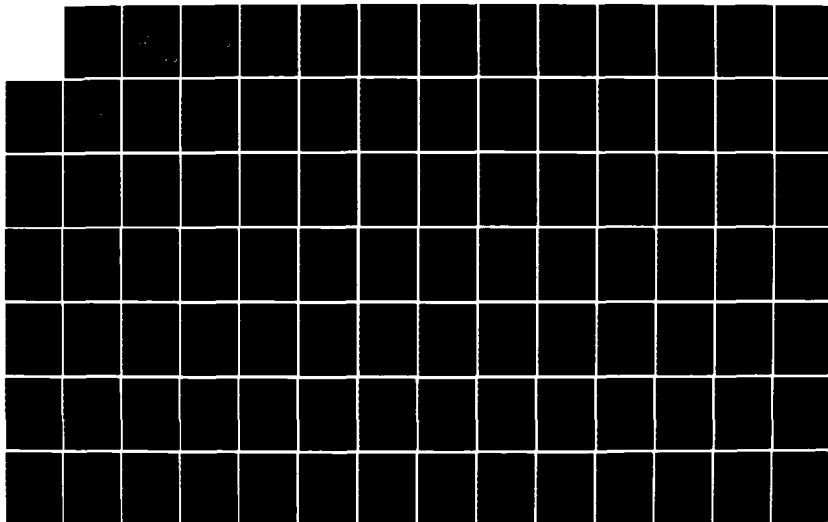
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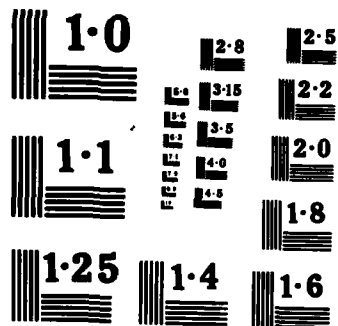
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# **PROCEEDINGS**

## **USERS' WORKSHOP ON COMBAT STRESS**

HCSD CONSULTATION REPORT #82-004

**Academy of Health Sciences**

**Fort Sam Houston, Texas**

**2 - 4 September 1981**

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The Proceedings document the workshop presentations and group reports. Combat stress casualties were analyzed for their historical significance. Recommendations to correct deficiencies in combat psychiatry and mental health services were discussed. The factors influencing combat behavior were examined. Tasks for identification and treatment of combat stress casualties were presented. Originator supplied Key words.		

Proceedings: Users' Workshop on Combat Stress  
Academy of Health Sciences, Fort Sam Houston, Texas  
2-4 September 1981

PREFACE

The purpose of the planners of the first Users' Workshop on Combat Stress was to present a forum to exchange ideas, share information on resources, and identify points of contact among combat division behavioral scientists. This proceedings intends to document the efforts put forward by all participants.

The Workshop clearly addressed the needs felt by mental health care providers in several key combat units. These needs included (1) authoritative information on current threat estimates, concepts on countering and defeating the threat, and casualty estimates; (2) discussion of projected tasks and functions of line and health care personnel who will identify, refer, treat, and/or prevent combat stress casualties; and (3) set goals, establish methodologies to achieve the goals, and decide upon means for evaluating goal attainment.

While a number of vital issues were addressed, the following three conclusions were strongly expressed:

1. If the US Army truly values mental health support in both garrison and combat, this support must be well known and readily accessible to the soldier.
2. Mental health support to divisions should be autonomous and clearly separated from hospital support.
3. Once the soldier becomes a patient, an administrative action, or a disciplinary problem, the opportunity for problem prevention is lost. Consequently, the effectiveness of mental health support should be measured more by the number of soldiers actively sought out and contacted rather than by the number who come to the clinic to be seen.

The consensus of the participants was that the experiential workshop mode offers a highly effective means of disseminating the information necessary for recognition and treatment of combat stress reactions. It is anticipated that other workers concerned about combat stress will employ workshop and other modalities to exchange ideas, develop training packages, and evolve workable approaches to addressing stress reactions in military settings.

A. David Mangelsdorff, Ph.D.  
MAJ T. Paul Furukawa, Ph.D.

Editors

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FACT SHEET

PURPOSE: To provide information on the background, scope, and agenda of, and scheduled participants in, the Users' Workshop on Combat Stress, 3-4 Sep 81, Bldg 2000, Fort Sam Houston, Texas.

FACTS:

1. Background.

a. In the Central Battle scenario, combat stress casualties are projected as the largest single category of casualties as well as the largest potential source of trained and available replacements.

b. The Directorate of Combat Developments and Health Care Studies serves as the AMEDD focal point for collection, dissemination, and consultation about concepts, combat developments, and casualty estimation models.

c. The Health Care Studies Division of the Directorate of Combat Development and Health Care Studies, in an approved study, has developed a list of tasks which need to be accomplished by individual soldiers, commanders, enlisted medical and AMEDD officers to deal with the recognition, disposition, and treatment of combat stress. This task list has been staffed with the OTSG mental health consultants. The final step in the study is to obtain the reactions of field mental health personnel as to the appropriateness and completeness of the task list.

d. The acceptance of the task list will effect training, manpower staffing requirements and other related developments. In order to predict and anticipate the ramifications of these developments, there is a need to bring together some of the expertise in the field of combat stress, the potential users and trainers, and subject-matter researchers.

2. Scope.

a. The intent of the Users' Workshop is to provide a forum for information exchange and discussion.

b. Academy faculty will present information on current developments in threat, psychiatric support systems, and proposed tasks/functions.

c. Participants from the combat units are asked to bring and describe whatever training programs, handouts, packets, or written ideas they may have for training soldiers, leaders, medical, and mental health personnel.

d. The outcome of the Users' Workshop will be that participating division-level mental health staff will be prepared to identify their unique training needs, commit themselves to developing and conducting their own training programs, evaluate their own programs, and share the results of the evaluation with the Academy and other participants at a later date.

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2-4 September 1981

AGENDA

When: 3-4 Sep 81, beginning at 0800 hrs

Where: Classroom, Directorate of Combat Development and Health Care  
Studies, Bldg. 2000

WEDNESDAY

- o Travel
- o Check in at Bldg. 367 for BOQ assignment
- o Phone POCs
  - Duty hours (before 1630 hrs): 221-4541/3116/3331/6514
  - After duty hours: Dr. Dave Mangelsdorff (344-0942)
  - MAJ Paul Furukawa (494-0544)

THURSDAY - Morning (begin at 0800 hrs)

- o Welcome, Introductions, and Purpose
- o Combat Stress Casualties in Perspective
- o Threat
- o Division 86
- o Theater of Operations Psychiatric Support System (TOPSS) Concept
- o Tasks and Functions of Combat Stress Casualty Identifiers,  
Evaluators, Treaters, and Preventers (MACRIT Study)

THURSDAY - Afternoon

- o Small task groups to identify the training needs, elements of  
training package, tailoring of packages
- o Plenary group sharing

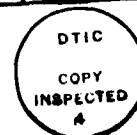
FRIDAY - Morning (begin at 0800 hrs)

- o Participation in a training exercise

FRIDAY - Afternoon

- o Evaluation of exercise
- o Application of Workshop content
- o Commitments for further sharing

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Academy of Health Sciences, Fort Sam Houston, Texas  
2-4 September 1981

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Proceedings: Users' Workshop on Combat Stress  
Academy of Health Sciences, Fort Sam Houston, Texas  
2-4 September 1981

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**PRESENTATIONS**

## COMBAT STRESS CASUALTIES IN PERSPECTIVE

COL William F. Schultheis, MC  
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Fort Sam Houston, Texas

### ASSUMPTIONS:

The FIRST BATTLE of the next high intensity war will utilize a CENTRAL BATTLE SCENARIO, and will be fought on an integrated battlefield.

50 out of every 100 battle casualties will be psychiatric within the FIRST 48 hours.

Pulses of battle will exceed 10-12 per day.

WWII: 4-5 pulses per day

### REVIEW OF TREATMENT PRINCIPLES:

- +BREVITY -- Treatment should be brief
- +IMMEDIACY -- Treatment should be instituted as soon as possible
- +CENTRALITY -- Treatment should be centralized
- +EXPECTANCY -- Convey positive expectation that soldier will return to duty
- +PROXIMITY -- Provide treatment as far forward as possible
- +SIMPLICITY -- Keep treatment methods simple

## BRIEF HISTORICAL REVIEW

### 1. KUMANO WAR (603 B.C.):

- \* "Evil Gods Spewed Out Poison -- People and Things all Became Ill"
- \* Malady disappeared after troops rested and morale restored

### 2. CIVIL WAR:

- \* Nostalgia: "Mild Insanity Caused by Disappointment and Longing for Home"
- \* Defective Character, Poor Moral Turpitude
- \* 5,200 Cases Hospitalized
- \* Poor Medical Evacuation Channels
- \* 1863 - Incidence Rate 0 -- By Directive
- \* Psychosomatic Hospitalizations Soared

### 3. RUSSO-JAPANESE WAR (1904-1906):

- \* Russian Psychiatrists Assigned Forward
- \* Forward Treatment Centers Established
- \* First Accurate Description of Traumatic War Neurosis
- \* Initially Effective -- Later Broke Down
- \* Proximity

### 4. WW I:

- \* Gen Gorgas Dispatched Committee to France (1917)
- \* Formation of 11Q Bed Psychiatric Hospitals Suggested
- \* Base Hospital #117 Established
- \* 3,300 N/P Patients Admitted
  - 50% Rtn'd to Combat
  - 41% Other Duties
- \* Proximity Re-Emerged as Primary Treatment Principle
- \* Clinical Picture: Tremors, Paralysis, Mutism, Ganser Syndrome

### 5. WW II

- \* No Effective Treatment-Evacuation Policy Existed Until 1943
- \* No Designated P/N Consultant TSGO
- \* Feb 20, 1943 -- Kasserine Pass -- Green, Well Equiped American Troops Were Tested by Africa Corps
- \* Situation Rectified
- \* P/N Center Located on Normandy Beachhead
- \* Clinical Picture: Depression, Apathy, Psychosomatic
- \* "Tremblers of WW I Became Gastric Neuroses of WW II"

### 6. KOREA:

- \* Psychiatric Casualties Initially Low - Troops Retreating
- \* Pusan Perimeter - Casualty Rate Increased - Static Defense
- \* All Divisions (Pusan) Had Division Psychiatrist
- \* Too Many Evacuated to Japan
- \* NP Centers Established in Korea
- \* 80% Rtn'd to Duty

7. VIET NAM:

- \* Atypical When Compared With All Previous Wars
- \* Low PN Casualty Rate (5%)
  - \* Limited Tour of Duty
  - \* R & R
  - \* Superior Aero-Medical Evac Policy
  - \* Intense, Brief, Sporadic Engagement With Enemy
  - \* Full Compliment of Divisional Mental Health Officers
- \* What is "Viet Nam Veterans Syndrome"?
  - \* Delayed Stress Reaction?
  - \* Depressive Variant?

8. ISRAELI CONFLICT (1973):

- \* Many Similarities to Envisioned Central Battle Scenario of Western Europe
  - \* Brief -- 3-4 Days
  - \* Mobile
  - \* Fluid
  - \* Intense - Initially Fought 24 Hours a Day
  - \* Heavy Casualties
  - \* Integrated - Air, Armor, Artillery Closely Coordinated
  - \* High N/P Casualty Rate
  - \* Re-Emergence of Treatment Principles
  - \* Treatment:
    - \* Rest
    - \* Encouragement
    - \* Ventilation (Abreaction)

## THREAT

MAJ Raymond L. Keller, MSC  
Academy of Health Sciences  
Fort Sam Houston, Texas

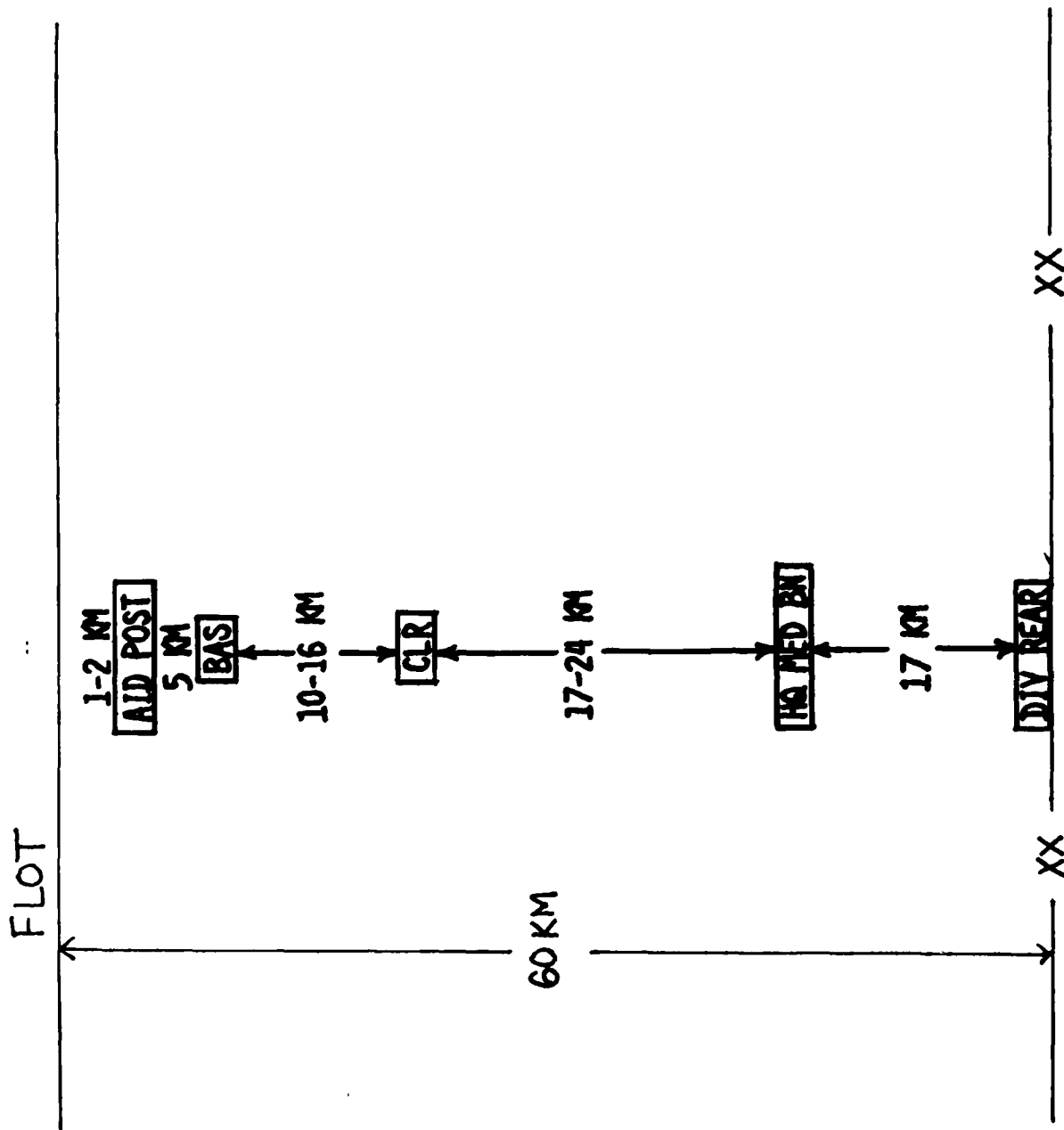
## THREAT

In this portrayal of threat to US Forces, it is worthwhile to present several aspects of the threat not routinely addressed. While weapons and weapons systems provide an immediate impact in casualty production, I believe that certain employment concepts themselves will result in an increased casualty production, especially battle exhaustion casualties. The Soviet Forces constitute the major threat force in Europe and their equipment and doctrine have been very successfully exported to the remainder of the world, I have therefore chosen to portray the threat to US Forces in terms of Soviet concepts of attack and pattern of attack.

The Soviet attack is characterized in their literature by a rapid build up of forces, echelonment of forces, massing of forces and fires and continuous attack by intense combat. These characteristics present, to the defending forces, continuous, unrelenting pressure exerted, as a result depth of attack, over extended periods of time. The view of a Soviet assault by the defending forces is one of continuous battle against a seemingly unending stream of fresh enemy forces. The intense combat generated by this echelonment of forces; that is assault battalions as the edge of an assault regiment which is the edge of an assault division which is part of a shock army which composes the cutting edge of a Front, together with the masses of artillery at each organizational level provide for no respite from combat. These attack concepts are implemented in an assault pattern that strives to attain isolation and destruction of the defending forces.

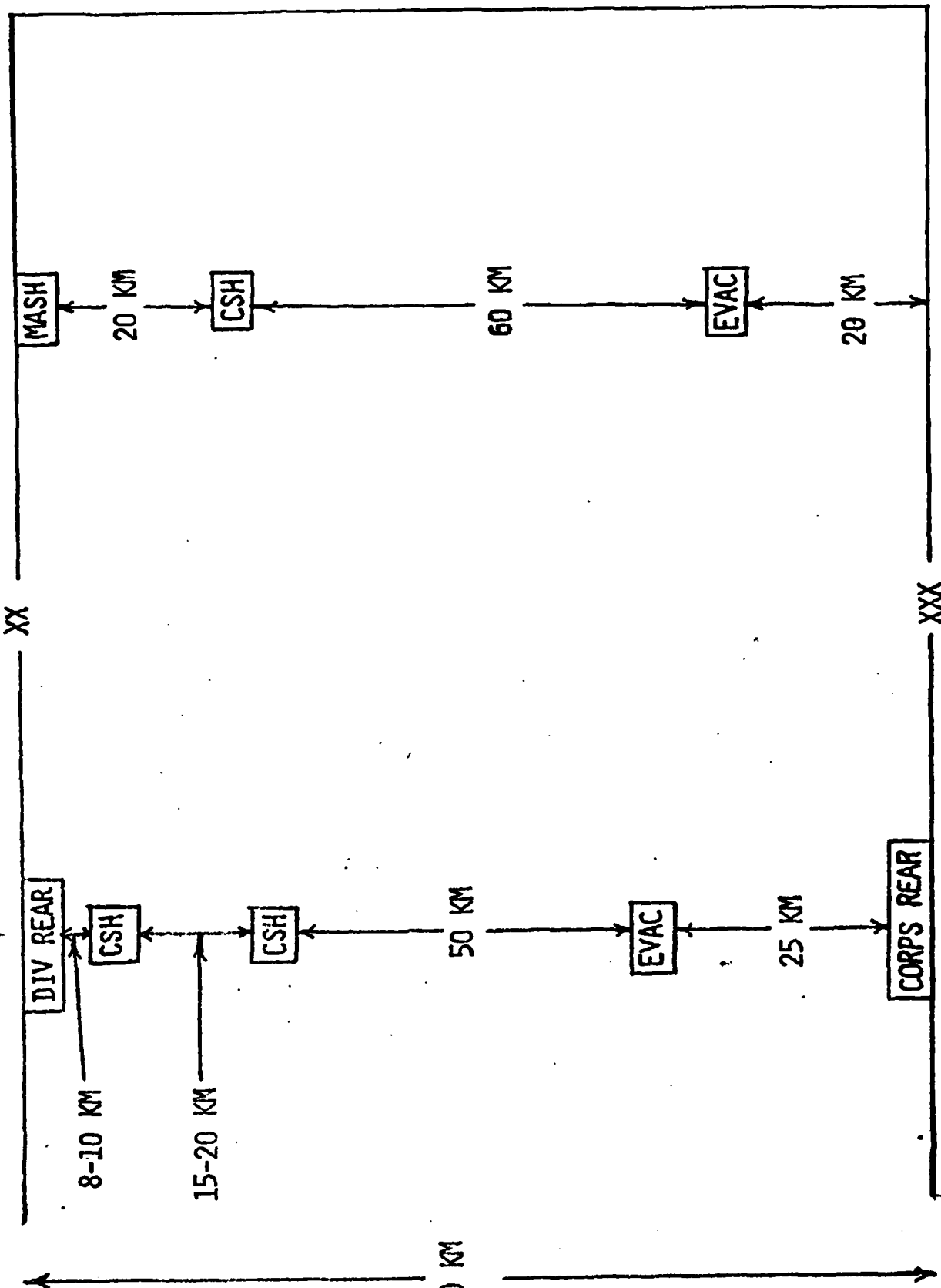
Soviet doctrine emphasizes isolation of defending combat units from their support base by use of penetration and fire. Tactical units will be walled off from their support base within the corps rear by conventional and nuclear munitions as well as chemical agents, surrounded and then destroyed in detail. US doctrine with its emphasis on the active defense, small mobile teams operating in an extremely fluid battlefield under chemical and nuclear warfare conditions demands great reliance on individual initiative and communications for effective command and control. The introduction, from the start, of effective electronic warfare by Soviet forces will make isolation of small units, to company team level, not only a perception but also an acute reality.

These two factors, unrelenting intense combat and a very real isolation from other tactical and supporting units on a very dangerous battlefield, represent aspects of the Soviet threat not frequently considered and which have, I feel, a direct bearing on the production of combat exhaustion casualties.



Approximate Distances in Division  
(numerous sources)





Approximate Distances in Corps (numerous sources)

## DIVISION 86

MAJ Franklin R. Brooks, MSC  
Academy of Health Sciences  
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As a result of the perceived threat, increases in the lethality of major weapon systems, the introduction of new weapon systems, and a whole host of other factors, the US Army undertook the significant task of studying its present divisional structure. Beginning with the project known as DRS (Division Restructuring Study) at Fort Hood, Texas, in 1976, this systematic analysis was folded into what is now referred to as Army 86. Under the umbrella of Army 86, are the analysis of the Heavy Division (frequently referred to as Division 86), the Light Division, Corps 86, and Echelons Above Corps (EAC) 86.

A major thrust in the reorganizational effort has been to insure that the respective units acquire the capacity for robustness (the ability of the unit to receive battle damage/casualties and continue to perform its mission), resiliency (the ability of the unit to restore its processes to a steady state of functioning), and redundancy (depth in the structure of the unit to provide immediate back-up or replacement of critical functions). Against this background, significant changes will occur in the structure of Divisional Medical Units which will ultimately affect the Psychiatric Evacuation System as we know it today.

Depicted in Figure 1 are some of the changes to the unit level (Combat Battalion) medical support. The left side portrays the present evacuation and treatment resources and the right side represents the approved changes.

With the addition of the emergency physician, the battalion aid station now has the capability of providing around-the-clock medical treatment under the supervision of a medically trained individual, as well as, the ability of splitting (with one portion being under the PA and the other under the emergency physician). Likewise, both evacuation and treatment sections have been given added mobility by the addition of more vehicles. It should be noted that this capability is most important when speaking of the central battle, for it is envisioned that it will not be too uncommon for the BAS to move 8-10 times within a 24 hour period.

The major changes to the medical battalion are depicted in Figure 2.

As shown in Figure 2, the most significant changes are the consolidation of all cots in the support company and the addition of two ambulances to each company. Moreover, emergency physicians have been included in the medical Battalion's TOE. PAs have been functioning in the medical battalion prior to the approved changes of Division 86 and will remain. With the addition of the emergency physicians, it will be possible to reconstitute unit level medical support using cells designed as aid stations and having Armored Personnel Carriers (M113s) used as replacements for vehicles lost in the forward areas.

The major disadvantage of Division 86, from an AMEDD perspective, is the loss of the medical companies to the Brigade Support Battalion. In effect, this leaves the Medical Battalion with a Headquarters & Headquarters Detachment and a Medical Support Company. (see Figure 3)

It is within the Medical Support Company where we find the Mental Health Section which will be composed of 1 psychiatrist, 1 clinical psychologist, 1 social work officer, another mental health officer (MOS not decided upon at this time) is presently being proposed, and two 91Gs. It should be noted that two 91Gs will be assigned to each Medical Company.

Silhouetted against these changes, as well as hypotheses about the nature of the next war, a Psychiatric Evacuation System has been proposed to preclude previously encountered misadventures.

# BATTALION MEDICAL PLATOON TANK AND MECHANIZED BATTALIONS

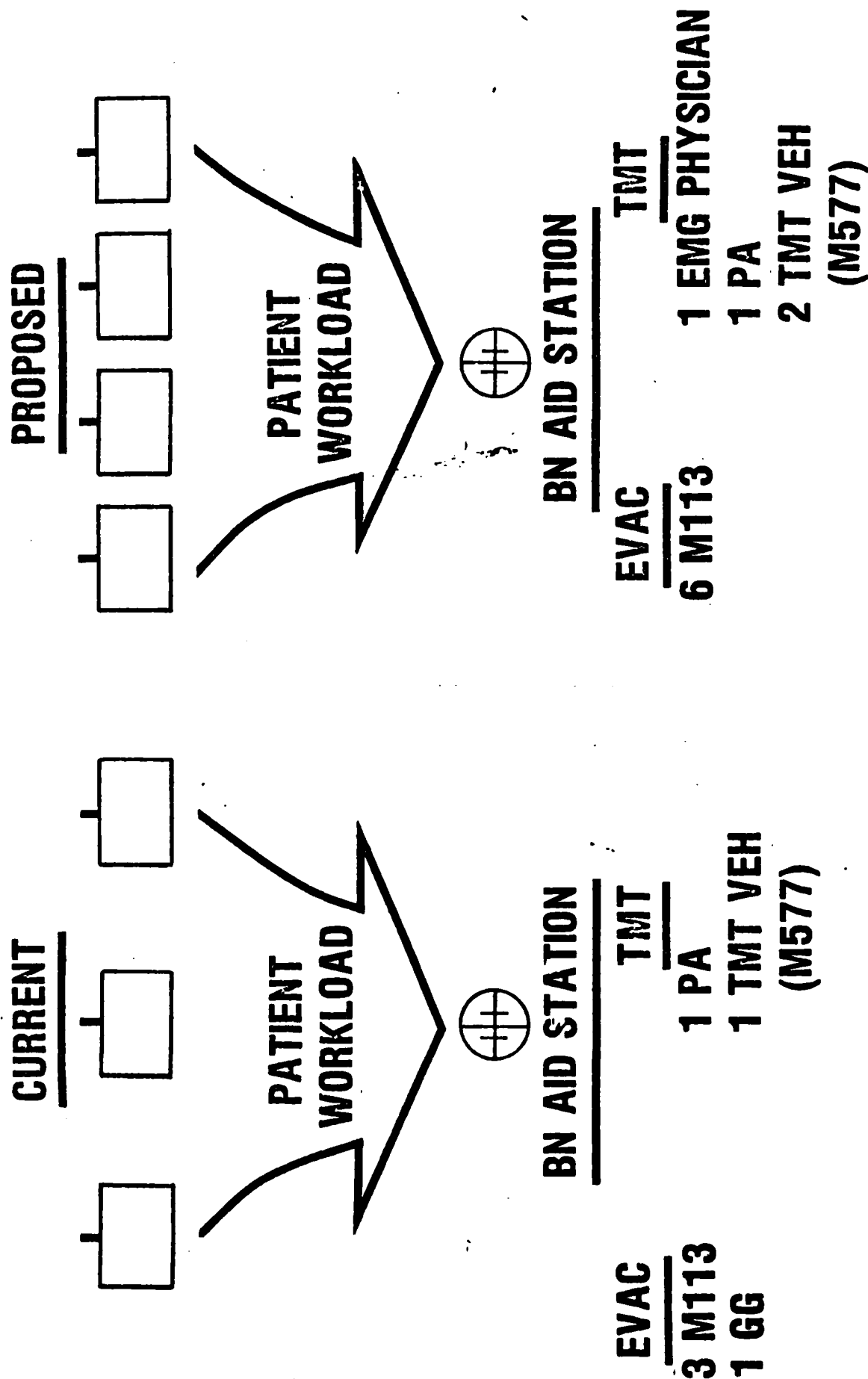
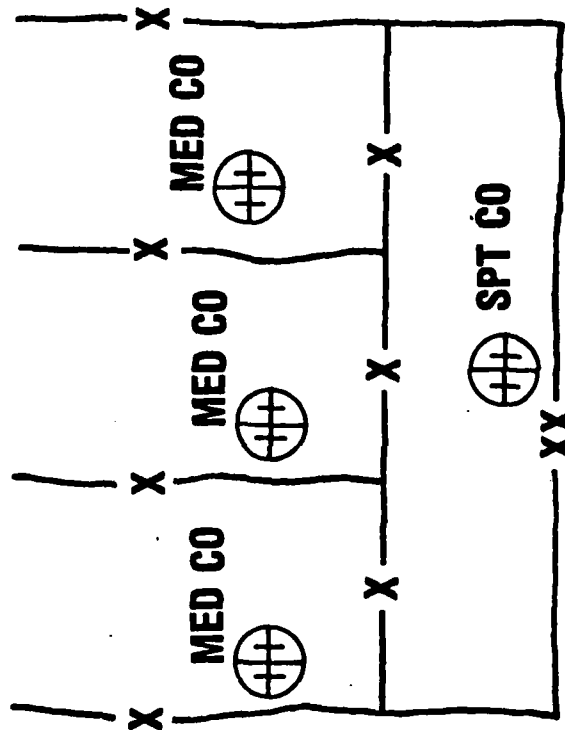


Figure J  
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# DIVISION MEDICAL BATTALION

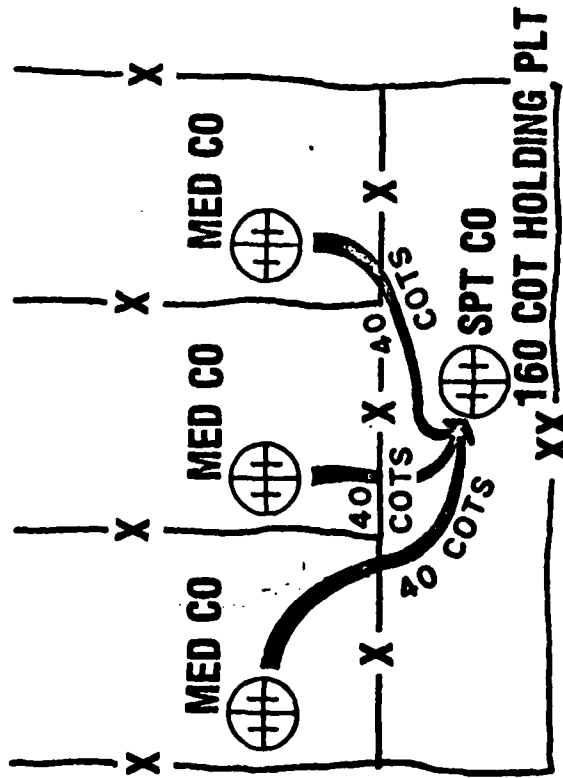
## CURRENT



PATIENT HOLD  
40 COTS x 4

AMB  
8

## PROPOSED



PATIENT HOLD  
160 COTS

AMB  
10

Figure 2  
16

## THEATER OF OPERATIONS PSYCHIATRIC SUPPORT SYSTEM (TOPSS) CONCEPT\*

MAJ T. Paul Furukawa, et al.  
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### 1. Purpose:

a. The purpose of this paper is to present an operational concept for providing a psychiatric support system for the theater of operations.

b. The threat that is envisioned for the 1980s is a conflict which can be described as highly lethal, intensive, and fluid. This type of combat poses many difficulties for medical support, especially for psychiatric support. Historical data from past wars (WWI, WWII, Korean Conflict) convincingly and consistently have demonstrated a theater-wide ratio of one Stress Reaction (SR) for every three wounded-in-action (WIA) over the entire conflict. This ratio will remain constant throughout combat, combat support, and combat service support units. During periods of highest intensity combat in defensive operations, as experienced by the Israelis in the early days of the 1973 Yom Kippur War, the number of SR may equal or exceed the WIA casualties.

### 2. Limitations:

The data upon which this concept is based does not contain information concerning the probable higher number of SR generated by:

- (1) NBC environment.
- (2) Women soldiers in the combat zone.
- (3) Family members near the combat zone.
- (4) Substance abuse.

Further study of the impact of these factors on SR rates must be conducted.

### 3. Operational Concept:

a. This concept of psychiatric support is to provide early and appropriate intervention and thus to prevent the overevacuation of Stress Reaction (SR) casualties from the combat zone. SR patients are soldiers who become ineffective in their combat roles for reasons other than wounds, organic disease, or ineptitude. The condition is a temporary emotional state caused by stress in combat. Among military medical personnel, SR is also called transient battle reaction and battle fatigue.

\* The draft TOPSS Concept is a working document prepared by elements of the USA Academy of Health Sciences (AHS) in cooperation with the OTSG behavioral science consultants. At the time of the workshop, the draft was being staffed throughout the AHS.

b. The following treatment principles govern the psychiatric support system:

- (1) SR is recognized and treated as soon as possible.
- (2) The soldier is treated as close as possible to his work/battle area.
- (3) The treatment plan clearly and explicitly includes returning the soldier to the same or comparable assignment, and the same unit, when feasible.
- (4) Treatment time is brief.
- (5) Treatment methods are simple.
- (6) Decisions concerning evacuation, when necessary and permitted by the tactical situation, are centralized at each level of care to reduce overevacuation.

c. This concept will be discussed as it relates to the levels of health service in the theater: unit, division, corps and echelons above corps.

(1) Unit Level

Unit level involves both medical and non-medical personnel responsibilities.

(a) The most important link in the system of preventing SR casualties is the individual soldiers' chain of command: squad leader, platoon sergeant, platoon leader, first sergeant and company commander. Given the intensity and length of constant combat, it is imperative that the leadership of every unit be trained to recognize the symptoms of SR and instructed in methods of preventing and handling this problem. Active participation in these areas will help to insure maximum availability of combat forces and minimum lost time for those SR casualties who must be removed from the line.

(b) The company aidman will be available to assist in reducing the SR casualty rate as well as facilitate assessment and initial treatment.

(c) The Battalion Aid Station (BAS), organic in the combat and combat support battalions, has the primary mission of providing emergency medical treatment to the combat casualty. Even though the BAS has only minimal capability to provide treatment for the SR casualty, the BAS is the logical initial triage point for determining the appropriate evacuation priority. The tactical environment will, in most situations, preclude all but the briefest stay at the BAS by the SR casualty. The primary function of triage at this level is to insure that the principles of stress treatment are followed by the company/battery/troop aidman and that SR casualties who should not have been removed from the line are returned; those who can be returned after a minimal stay at the BAS (of up to 4-6 hours) are promptly treated and returned to duty; and those who will not be returned to duty from this level are evacuated rearward as the tactical situation permits.

## (2) Division level

(a) The Brigade Clearing Station, supporting the maneuver brigades, have the primary mission of providing initial resuscitative medical treatment. Under the principles of stress treatment the Brigade Clearing Station is the most advantageous location to provide treatment to the SR casualty. This unit should have a treatment time of up to 48 hours depending on the tactical situation. The treatment emphasis for the Combat Stress casualty will be to provide a "soldiering/working milieu" when feasible, rather than a "hospitalized patient" environment. Segregating the Combat Stress casualty from the WIA and retaining him as this level or lower to perform minor military duties enables the preponderance of Combat Stress casualties to be effectively treated, reassessed and returned to their own units. A Mental Health Officer from the division's mental hygiene section would be attached to insure that appropriate assessment and treatment are accomplished.

(b) The Division Clearing Facility, located in the DISCOM, has the primary mission of providing initial resuscitative medical care on an area basis to the division rear. In addition to having the same capabilities as the forward medical companies, the medical support company has the division mental hygiene section. It is anticipated that this company will be in location long enough to hold surgical and medical patients up to 96 hours. Therefore, the division psychiatrist may hold Combat Stress casualties up to 96 hours before returning to duty. To prevent overevacuation and facilitate diagnosis and proper destination of all evacuees, the division psychiatrist will supervise the evaluation and approve the evacuation of each Combat Stress casualty designated to leave the division. At this point, all neuropsychiatric patients requiring hospitalization in a medical treatment facility would be separated from those Combat Stress casualties who do not require hospitalization.

## (3) Corps level

(a) Corps level psychiatric support has been totally reorganized by the elimination of the Team OM and the placing of its assets in Teams OA, OB and OC, Dispensaries and Medical Clearing Company (Separate). The reorganization provides advantages cited below.

(b) The dispensaries are allocated on the basis of troop density and provide division level psychiatric support comparable to the forward medical companies in the division.

(c) The Medical Clearing Company provides the same capability as the dispensaries and, in addition, has that level of psychiatric expertise to hold patients up to 96 hours. This holding capability is under the same "soldiering/working milieu" policy as that in the division.

(d) The Medical Clearing Company provides back-up support to the division when the tactical situation does not allow patients to be held up for 96 hours. Patients can be transferred to the Headquarters, Medical Clearing Company. This mental hygiene section can also be attached for dining facility support to another medical unit or CSS unit if the medical clearing company must move without it.



(e) The Evacuation Hospital will be capable of providing psychiatric inpatient care. This unit will provide the necessary holding capability for those patients who cannot be returned to duty within 96 hours. This patient holding period is limited to the amount of time necessary to arrange for evacuation.

(4) Echelons above corps

Psychiatric support in the Communication Zone (COMMZ) is provided in the same manner as in the corps level, through dispensaries and medical clearing companies. The exception is in inpatient care. Since there are no Evacuation Hospitals in the COMMZ, this responsibility will be provided by the General Hospital. Again, this holding capability is limited to the amount of time necessary to arrange patient evacuation.

## TASKS AND FUNCTIONS OF COMBAT STRESS CASUALTY IDENTIFIERS (MACRIT STUDY)

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### 1. INTRODUCTION.

a. Problem. For AMEDD personnel planning factors, there is a lack of specific detailed tasks and the amount of time expended in these tasks for selected specialty skill identifiers. Information is needed to provide a basis for planning the various staffing ratios in field and fixed medical treatment facilities.

b. Purpose. This investigation will assist in determining who will do what types of interventions for psychiatric casualties in theaters of operations.

#### c. Background.

(1) The Surgeon General has requested that a study be conducted under the authority of AR 5-5 to deal with manpower planning. The AMEDD agency with responsibility for generation of MACRIT planning factors is the Manpower Authorization Criteria (MACRIT) Branch, Organization Division, Directorate of Combat Developments and Health Care Studies, Academy of Health Sciences. Discussion with the MACRIT Branch recognized psychiatric casualties as the area of primary concern for manpower planning needs.

(2) The term psychiatric casualty or transient battle reaction/ battle fatigue (TBR/BF) refers to transient emotional reactions to the stresses of combat. The manifestations may be either psychological and/or physical; they represent a collection of ineffectiveness conditions with varying organic, psychological, social, cognitive, motivational, and political components (Rath, 1980). The symptoms may change in a matter of several hours to several days, depending upon the individual, the nature of the combat, and how the casualty is labeled. A soldier who becomes a psychiatric casualty is ineffective in his combat role for reasons other than wounds, organic disease, or ineptitude.

(3) Recent military history, the increasing lethality of the modern integrated battlefield, the depersonalization of tactics, the complexities and demands of operating highly technical, sophisticated equipment, and the probability that future wars will involve continuous, highly mobile battle -- all suggest that soldiers will be subjected to greater stresses in combat than in past conflicts. New, more efficient weapons systems will also increase the stresses on the individual soldier. With the probability of greater stresses and prolonged battlefield engagements, planners must anticipate an increase in the risk of psychiatric casualties.

(4) A recurrent theme in military history is the failure to heed the lessons learned in past conflicts. The lessons learned about treatment of psychiatric casualties in World War I were relearned in World War II and Korea. Glass (1966, p. 736) states "the most important lesson learned by psychiatry in World War II was the failure of responsible military authorities,

during mobilization and early phases of hostilities, to appreciate the inevitability of large-scale psychiatric disorders under conditions of modern warfare."

## 2. OBJECTIVE.

The study objective is the identification of the various tasks to be performed by selected specialty skill identifiers dealing with psychiatric casualties (TBR/BF) as the first phase of the development of medical manpower authorization criteria planning factors.

## 3. METHODOLOGY.

a. Health Care Studies Division, Academy of Health Sciences, developed a list of tasks and functions necessary for the recognition, disposition, and treatment of psychiatric casualties. Personnel and level of experience to perform the functions were addressed.

b. Behavioral Science Division, Academy of Health Sciences, was consulted in the determination of functions, personnel, and level of experience for recognition, disposition, and treatment of psychiatric casualties.

c. Coordination with the Consultants Office, Office of The Surgeon General (in particular the psychiatry, psychology, and social work consultants) determined the functions, personnel, and level of experience for recognition, disposition, and treatment of psychiatric casualties.

d. After the functions, personnel, and level of experience have been described, the results will be forwarded to the proponent agencies for ascribing who performs what tasks with subsequent changes made to AR 611-101 (Commissioned Officer Specialty Classification System) and AR 611-201 (Enlisted Career Management Fields in Military Occupational Specialties).

e. Manpower Authorization Criteria (MACRIT) Branch, Organization Division, Directorate of Combat Developments and Health Care Studies, Academy of Health Sciences, will then undertake an analysis to determine requirements for the various functional areas based on decisions addressed in c and d above as well as the amount of time expended in performing specific tasks by SSI.

f. Directorate of Training, Academy of Health Sciences, will be advised of the findings and implications for training and development. Courses of instruction will need to be evaluated for meeting the training requirements for recognition, disposition, and treatment of psychiatric casualties.

## 4. FINDINGS.

Table 1 depicts the list of tasks and functions necessary for the recognition, disposition, and treatment of psychiatric casualties (TBR/BF). The level where the task is to be performed and the personnel involved in making the decisions are described also.

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Table 1

LEVEL	TASKS/FUNCTIONS	TIME
COMPANY/SQUAD		1 - 2 hours
individual soldier, squad leader, platoon sgt, platoon leader, 1st sgt, company cdr	<p>Assess all members of unit who are not functioning up to demands of tactical situation</p> <p>Determine nature and amount of fatigue, stress, duration of exposure, disease, fear, chemical exposure (self-induced and/or external), radiation exposure</p> <p>Recognize preventable measures for transient battle reaction/battle fatigue</p> <p>Emphasize unit cohesion, team building, buddy system</p> <p>Decide whether reactions are normal for individual in combat/tactical situation</p> <p>Recognize and assess whether individual is disabled:</p> <ul style="list-style-type: none"> <li>a) apparent wound, injury, disease, chemical or radiation exposure</li> <li>b) transient battle reaction/battle fatigue</li> <li>c) will individual's behaviors be disruptive</li> </ul> <p>Reassure individual of normal reactions to situation:</p> <ul style="list-style-type: none"> <li>a) individual must cope by himself or at least within unit</li> <li>b) individual must be able to carry out his/her duties (although not necessarily symptom free)</li> </ul> <p>Instill expectation to return to duty: policy of no evacuation</p> <p>If soldier's symptoms are disruptive and/or he cannot exercise combat skills or effectively perform his duties in a reasonable amount of time, call aidman</p>	
aidman 91B (E3-E6)	<p>Decide whether reactions are normal for individual in combat/tactical situation</p> <p>Assess whether individual is disabled:</p> <ul style="list-style-type: none"> <li>a) apparent wound, injury, disease, chemical or radiation exposure</li> <li>b) transient battle reaction/battle fatigue</li> <li>c) will individual's behaviors be disruptive</li> </ul>	

aidman 91B

Reassure individual of normal reactions to situation

Assess individual from personal knowledge of individual's past history and experience:

- a) how long in combat
- b) previous stress reactions
- c) previous medical treatments (what, how long ago, recovery time)
- d) tactical situation

Assess capability of functioning/not functioning:

- a) knowledge of common symptoms of transient battle reaction/battle fatigue
- b) course of transient battle reaction/battle fatigue
- c) phases of transient battle reaction/battle fatigue
- d) employ acceptable treatment methods
- e) provide crisis treatment for transient battle reaction/battle fatigue

Instill expectation to return to duty

Insure individual's history and past military performance (if known) is documented

Only if tactical situation allows, consider evacuating individual to Battalion Aid Station for rest and further evaluation if necessary

#### BATTALION AID STATION

4 - 6 hours

91B (E5-E6).  
91C (E5-E6)  
PA,  
physician

Check for whether individual is disabled:

- a) apparent wound, injury, disease, chemical or radiation exposure
- b) transient battle reaction/battle fatigue
- c) will individual's behaviors be disruptive

Instill expectation to return to duty

Assess capability of functioning/not functioning:

- a) tactical situation
- b) knowledge of common symptoms of transient battle reaction/battle fatigue
- c) individual's past history, experiences, and past military performance
  - 1) how long in combat
  - 2) previous stress reactions
  - 3) previous medical treatments (what, how long ago, recovery time)
  - 4) evaluation by aidman

91B (E5-E6),  
91C (E5-E6),  
PA,  
physician

- d) course of transient battle reaction/battle fatigue
- e) phases of transient battle reaction/battle fatigue
- f) employ strategies for coping
- g) employ acceptable treatment methods

Assess whether individual's behaviors will be disruptive

Assess for return to unit if capable of functioning in combat role  
(although not necessarily symptom free)

Only if not capable of functioning in combat role and if tactical  
situation allows, consider evacuating individual to Brigade Clearing  
Company for rest and further evaluation

#### BRIGADE CLEARING STATION

12 - 24 hours

91G (E5-E6),  
Mental Health  
Officer (M.H.O.):  
60W, 68R, 68S)  
physician,  
dentist

Provide consultation during pre-deployment, pre-combat, and during  
combat to individual soldiers and commanders

Determine needs of units, strengths and weaknesses

Consult with commanders and staff elements on mental health aspects

Educate as required

#### In combat at Brigade Clearing Station

Check for whether individual is disabled:

- a) apparent wound, injury, disease, chemical or radiation exposure
- b) transient battle reaction/battle fatigue
- c) will individual's behaviors be disruptive

Instill expectation to return to duty

Assess capability of functioning/not-functioning:

- a) will individual's behaviors be disruptive
- b) tactical situation
- c) knowledge of common symptoms of transient battle reaction/  
battle fatigue
- d) individual's past history and experiences
- e) course of transient battle reaction/battle fatigue
- f) phases of transient battle reaction/battle fatigue
- g) employ strategies for coping
- h) employ acceptable treatment methods

91G

Determine if brief psychotherapy is required, either individually or in groups

M.H.O.

Employ brief psychotherapy if necessary

91G (E6)

Determine if medication is required then make recommendation

M.H.O.

Screen need for medication and administer if necessary

91G

If rest is required, insure individual is monitored for changes in mental and/or medical status (particularly after medications)

91G (E6)

Supervise individuals not capable of returning and functioning in combat role, but who are temporarily used in combat support role at the brigade level, if tactical situation permits

M.H.O.

If soldier is not capable of functioning in either combat or combat support roles and if tactical situation permits, consider evacuating to Rear Clearing Area at Headquarters and Support Company for further evaluation





## TASK GROUP GOALS



TASK GROUP: FORT HOOD  
MAJ(P) Stephen N. Xenakis, MC  
MEDDAC, Fort Hood, Texas

PROBLEMS AND SOLUTIONS REFERENCE USER'S WORKSHOP OF 91G'S

1. IDENTIFICATION OF PROBLEMS AT FORT HOOD - INADEQUATE PREPARATION FOR COMBAT

- a. Division mental health teams organization and functioning in garrison
  - 1. Mode in garrison is not analagous to proposed mode in combat.
  - 2. Limited direct knowledge in the identification and treatment of combat stress reactions.
  - 3. Limited opportunity to develop skills in the identification and treatment of combat stress reactions.
  - 4. Insufficient team cohesiveness of personnel within medical units.
- b. Insufficient priority of medical care amongst combat units.
  - 1. Inadequate preparation for medical casualties and problems.
  - 2. Inadequate training for combat troops in identification and treatment of major medical problems.
- c. Insufficient training in identification and treatment of combat stress reactions.
  - 1. Lack of awareness amongst command personnel and combat troops.
  - 2. Inadequate skills for identification and treatment of combat stress reactions.
  - 3. Insufficient planning for the limitations imposed by combat stress reactions on accomplishing combat missions.

2. PROPOSED SOLUTIONS

- a. Comprehensive training program on the identification and treatment of combat stress reactions.
- b. Establish emergency care service for treatment of traumatic stress disorders.
  - (1) Model for identification and treatment of stress reactions.
  - (2) Opportunity to develop skills and crisis intervention.

3. PROGRAMS DIRECTED TO POST AND DIVISIONS

- a. Reorganize division mental health teams in analogous mode to functioning in combat.
- b. Establish training programs with Division Surgeons for medical personnel and combat personnel in the identification and treatment of combat stress reactions.
- c. Present briefings to increase awareness regarding combat stress reactions and effect on combat effectiveness.

SUBJECT: Problems and Solutions Reference User's Workshop of 91G's

- d. Programs focused to higher command from the Academy of Health Sciences and Office of the Surgeon General.
  1. Request guidance and policy regarding training of all personnel in combat stress.
  2. Request guidance and policy devised by FORSCOM and TRADOC in the identification and treatment of combat stress reactions.
  3. Develop audio visual material for training and briefing.
  4. Implement problems in division and combat psychiatry in EFMB training and testing.
  5. Establish an office of behavioral science within the Office of the FORSCOM Surgeon.
  6. Develop training in management and administration for behavioral science personnel.

TASK GROUP: 101ST AIRBORNE  
CPT James R. Reaves, Jr.  
101st Airborne Div  
Fort Campbell, KY

101st Airborne Division (Air Assault) Task Goals

GOAL 1

- a. defined - develop and implement a stress management training model with a primary emphasis on prevention.
- b. how to reach goal - this model will be developed by the DHM staff.
- c. evaluate progress - evaluation can be made after each presentation.

GOAL 2

- a. defined - evaluate this (these models)
- b. how to reach goal - the division mental health staff will assume responsibility for conducting an ongoing evaluation process, primarily through direct feedback from commanders attending the workshop.

GOAL 3

- a. defined - develop combat stress presentations aimed primarily at commanders.
- b. how to reach goal - use of CPT Tamayo's "PIE, BICEPS" approach. A possible approach here would involve the presenting of this program to the Division Commander by the Division Surgeon and 326th Medical Battalion Commander. Once accepted, the DMH staff could present the program in descending order down through the company level.
- c. evaluate progress - evaluation will be evident by the acceptance of our program at each descending level.

GOAL 4

- a. defined - provide data input to DA for short and long range policy development surrounding the arena of combat stress.
- b. how to reach goal - provide ongoing input of our program development to the Academy of Health Sciences, Health Care Studies.
- c. evaluate progress - evaluation will be done through a continuing dialogue with AHS, Health Care Studies.

#### GOAL 5

- a. defined - develop realistic field simulations on a "mass casualty" dimension.
- b. how to reach goal - this will be done through a card sorting system and can be used during field training exercises.
- c. evaluate progress - future determinate.

#### GOAL 6

- a. defined - improve command consultation.
- b. how to reach goal - I have organizationally divided the 101st and assigned our 91Gs to specific components, i.e., Sgt Knott - 1st Bde., Sp Smith - 2nd Bde., etc. Our staff will be continually visiting our units and reinforcing the functional methods most effective in dealing with stress.
- c. evaluate progress - a reduction in the number of personnel hospitalized, reduced AWOL rates, and reduced patient load are among various indicators which can be used to measure the cohesiveness of units.

#### GOAL 7

- a. defined - greater involvement with leadership courses, OE courses and platoon level personnel.
- b. how to reach goal - after the combat stress model has been developed and delivered at the unit command level, the DMH staff can begin working at the platoon level as well as reaching into various course avenues available within the 101st.

TASK GROUP: 82ND AIRBORNE DIV  
CPT GARY RIGGS, MC  
82nd Airborne Div  
Fort Bragg, NC

1. Reflecting the issues discussed and considered at the combat stress workshop last month in Ft. Sam, the division Mental Health Section (DMHS) of the 82nd Airborne Division (82nd), Ft. Bragg selected the following goals to address those issues.

A. Assess the impact of those issues upon the way DMHS, 82nd is organized and the way it carries out its operations or conceives of carrying out its operations.

B. Further educate and orient DMHS staff in regard to combat stress issues.

C. Discuss the issues and their probable impact with key members of DMHS's organizational supports and with those responsible (Division Surgeon and G-1) for the management of 82nd casualties and replacements, so as to initiate consideration by those persons of combat stress issues in relation to organization, planning, operations and training.

D. Formulate and plan general directions and alterations in the conceptualization, organization, and operations of DMHS, 82nd to respond to the anticipated impact of combat stress issues on DMHS processes both in garrison and in combat.

E. Devise and codify a combat S.O.P. for the 82nd, DMHS reflecting principles derived from consideration of the issues, the 82nd projected missions, deployment configurations, and combat scenarios. (Emphasis to be placed on field testing proposed S.O.P.s for efficacy, feasibility, and efficiency.)

F. Revise DMHS priorities, practices, and procedures in garrison to emphasize those skills and tasks that will be most useful to DMHS in performing its combat mission.

(1) De-emphasize long term, one-on-one, individual treatment techniques that focus primarily on meeting individual needs rather than organizational needs.

(2) Emphasize crises intervention and quick assessment, short-term therapy and efficient treatment and processing of large numbers of personnel.

(3) Emphasize consultation and preventative roles.

(4) Foster use of infinitely more abundant stress management resources to be found within each unit's own processes and structure, so that each unit will more effectively and efficiently assess and resolve its stress related problems both in garrison and in combat.

(5) Emphasise concept of maximizing human and social resource recovery to meet organizational needs.



G. Initiate and emphasize DMHS command consultation program to provide a vehicle for moving assessment and treatment of stress problems as far "forward" as possible, and to inform and enable unit leaders regarding the management of both combat and garrison stress casualties.

H. Revise DMHS inservice training to emphasize combat and garrison stress issues.

I. Devise and implement measures to help gauge levels of social unit and personnel preparedness within the 82nd.

J. Maintain informational feedback network with other Army agencies responsible for anticipating and planning around combat stress issues.

2. At present many of these goals have been implemented or are in the process of implementation. The others, obviously, reflect more complex processes and are, therefore, in planning stages. However, in the light of current events we in the 82nd, DMHS are thoroughly convinced of the importance of these goals and are dedicated to their realization.

PRELIMINARY REPORT ON PROJECT COPE



PRELIMINARY REPORT ON PROJECT COPE  
(COMBAT OPERATIONS AND PSYCHIATRIC EFFECTIVENESS)  
CPT Federico M.V. Tamayo, Ph.D.  
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PROJECT COPE  
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## INTRODUCTION

Project COPE (Combat Operations and Psychiatric Effectiveness) was organized in early 1981 as a training mission for the Community Mental Health Activity (CMHA) of Fort Knox, Kentucky. The projects' purpose is to develop training programs relevant to all US Army personnel for the effective management of mass psychiatric casualties. The need for such programs has recently been clearly established (See Annex A). Project COPE is being conducted in three phases:

PHASE ONE: Development of Training Modules

PHASE TWO: Implementation of Training Modules

PHASE THREE: Assessment of Training Modules

The first two phases have been completed to date. Project COPE is currently in the third phase, and a final report is anticipated by November 1981.

## PHASE ONE

### Development of Training Modules

The following modules were developed in this phase:

1. Didactic Module
2. Practical Exercise Module
3. Field Training Exercise Module

1. Didactic Module. This module is a formal 30 minute lecture/discussion dealing with the management, treatment, and prevention of battlefield psychiatric casualties (See Annex B). The following are the lecture objectives:

- a. List and define the three principles of combat psychiatry.
- b. Described the type of battlefield conditions anticipated in the next war.
- c. Define the term "Battle Fatigue" (BF).
- d. State the ratio of Battle Fatigue (BF) to wounded-in-action (WIA).
- e. Identify the factors necessary to reduce the high probability of psychiatric casualties.

The participants are provided with a study containing answers to these objectives. The module content is based on an extensive literature review of combat psychiatry studies.

2. Practical Exercise Module. This module is a simulation of a mass psychiatric casualty situation near the Forward Edge of the Battle Area (FEBA). Participants are required to role play medical personnel at the Battalion Aid Station, and are equipped with a modified field phone system. Additionally, they are briefed on evacuation procedures and available psychiatric resources at higher medical command levels. At the beginning of the exercise, the participants are immediately required to triage 50 or more psychiatric casualties (represented by analog field medical cards) with varying degrees of emotional, mental and physical problems. The casualties are to be sorted into four categories:

- a. Return to duty immediately.
- b. Retain to observe or treat for a limited period and then return to duty.
- c. Evacuate immediately.
- d. Evacuate after a limited period.

In the scenario, radio communications to higher levels of command are permanently suspended; all evacuation capabilities are eliminated; nuclear, biological and chemical (NBC) warfare conditions are introduced; a beleaguered field commander refuses the return to duty of psychiatric casualties; a "live" and disruptive psychiatric casualty enters the aid station; and an order to move out is abruptly received. The participants are evaluated on their ability to appropriately sort the casualty cards and effectively deal with the stress situations imposed (See Annex C for sample situations). The exercise is followed by a group debriefing. The exercise generally requires about 30 minutes to conduct effectively. Different situations can be further added to this module to emphasize teaching points, reinforce combat psychiatric principles, and to increase stress play (See Annex D).-



3. Field Training Exercise Module. The purpose of this module is to provide mental health personnel with large numbers of clients arriving at unannounced times. An average workday CMHA caseload ranges between 30-60 initial intakes. These clients are normally managed by scheduled appointments, which prevent backlogs and crowded lobbies. In this module, all scheduling is eliminated as clients and units are informed that CMHA is operating solely on a walk-in basis. The CMHA unit itself is set up in a GP large tent within a field hospital, and all CMHA clients are referred to the field hospital compound. These procedures generate high numbers of clients appearing spontaneously, and although they are not suffering from battle fatigue, most are undergoing some form of acute situational stress (due to job, training, "other life problems", and pending administrative actions). The "acuteness" of their difficulties make the use of combat psychiatric techniques very applicable. Behavioral science personnel are required to make the following dispositions:

- a. Return to duty after a brief intervention.
- b. Retain to observe or treat for a limited period and then return to duty.
- c. Evacuate immediately to a fixed hospital facility.
- d. Evacuate to a fixed hospital facility after a limited period.

The participants are evaluated on their ability to triage and to make dispositions rapidly and effectively.

## PHASE TWO

### Implementation of Training Modules

1. The Didactic Module has been presented to professional medical personnel as a continuing medical education workshop at the Ireland Army Community Hospital; to the Fort Knox Community Mental Health Activity staff; as well as to the OM Psychiatric Team of the Indiana Army Reserve, and medical personnel participating in an annual MEDDAC field training exercise.
2. The Practical Exercise Module was presented to the 13 member CMHA staff and five members of the OM Psychiatric Team of the Indiana Army Reserve (one psychiatrist, one social work officer, one psychiatric nurse, and two 91Gs).
3. The Field Training Exercise Module was utilized by the military CMHA staff (one psychiatrist, two social work officers, one psychologist, and five 91Gs). A similar module was conducted for the five members of the OM Psychiatric Team of the Indiana Army Reserves.

### PHASE THREE

#### Assessment of Training Modules

The purpose of this phase is to determine the necessary and sufficient conditions for adequate training in combat psychiatry. For example, does a participant have to pass the didactic and practical exercise modules to be effective in the field training exercise modules? In other words, can the time spent in going through modules one and two (no more than two hours) provide a conceptual framework, if not a working familiarity, with the principles of combat psychiatry so as to reduce errors or inefficiency in module three? Furthermore, does the didactic module provide training adequate enough to reduce errors or inefficiency in module two? These empirical questions are currently being assessed in the current phase of Project COPE.

Will the training received in the modules identified adequately prepare participants to manage large numbers of psychiatric casualties in the "the next war"? The answer to this question, short of actual war, requires the simulation (through role play) of large numbers of soldiers undergoing battle fatigue in an integrated battlefield situation. However, the time and personnel required may make such an undertaking costly, time consuming, and probably unnecessary. The mental set provided by the training package of Project COPE represents an ideal alternative, given especially that the entire US Army needs to be trained in the prevention and management of psychiatric casualties. These issues will be seriously addressed in the final phase of Project COPE.

**ANNEX A**



TRAINING PERSONNEL IN THE  
PREVENTION AND MANAGEMENT OF  
BATTLEFIELD PSYCHIATRIC CASUALTIES:  
CONSIDERATIONS FOR TRAINING BASED  
ON THE NEXT WAR

Paper presented to the Combat Development  
and the Health Care Studies Directorate

5 December 1980

CPT FEDERICO M. V. TAMAYO, Ph.D.

## PURPOSE

The purpose of this presentation is to recommend considerations needed for the development of training programs in the identification and management of psychiatric casualties.

## ASSUMPTIONS

The strong current interest in psychiatric casualties results from the following assumptions:

1. The next war will be a highly intensive, continuous and mobile armed conflict in Central Europe.
2. The next war will result in significant numbers of psychiatric casualties, so that medical facilities will be overwhelmed and engaged forces depleted (Ingraham and Manning, 1980).
3. High stress conditions will prevail and make every soldier susceptible of becoming a psychiatric casualty.
4. The psychiatric casualty will be a highly recoverable asset and will represent the only sizable manpower replacement source early in combat (Rath, 1979).
5. The next war will be fought in an integrated battlefield.

## FACTS RELEVANT TO THE PURPOSE

Two factors are relevant concerning psychiatric casualties:

1. The mental health technology currently exists to prevent and manage psychiatric casualties. Units and medical organizations can lessen the probability of high numbers of psychiatric casualties, if the following principles are observed:
  - a. Proximity (treat as near as possible to the place of breakdown), immediacy (treat as soon as possible after the breakdown), and expectancy (have the soldier anticipate a return to duty after brief treatment).
  - b. Reinforce unit cohesion, small group integrity and social support systems.
  - c. Help troops manage significant life stresses (Tamayo, 1980)>
2. Behavioral science personnel, combat and combat support personnel, and medical personnel are not prepared individually, organizationally, or procedurally to expect, recognize or manage significant numbers of psychiatric casualties (Rath, 1979).

## DISCUSSION

Very little is known about how best to train personnel for dealing with high psychiatric casualty rates. Several considerations, however, are important:



1. All individuals within the military must be prepared to deal with psychiatric casualties. The level of training would depend on a servicemember's function. Three categories need to be considered:
  - a. Behavioral science personnel need to be able to recognize normal battle reactions and to be able to identify the wide variety of non-normative reactions. In addition, mental health personnel need training in developing management procedures for dealing with a mass psychiatric casualty situation. The ability to recognize who must be evacuated, who requires restraints, who is actively homicidal or suicidal, as well as to make these evaluations expeditiously, demands training of the highest caliber. Furthermore, it is essential that behavioral science personnel recognize the importance of primary prevention by emphasizing organizational consultations. Also, the ability to deal with stress and to model stress management techniques is a crucial need. Along with a high stress situation and high numbers of psychiatric casualties, the combat behavioral scientist must be adept at working under nuclear, biological and chemical warfare conditions. In short, mental health personnel must abandon traditional modes of treatment and prepare themselves for dealing in an extremely confusing, fluid and disorganized environment.

- b. Medical personnel must be able to identify and manage combat stress reactions, and to minimize premature evacuations at the same time. At the front, a high percentage of casualties will probably be suffering from battle fatigue (normal stress reactions). In consultation and coordination with behavioral science personnel, medical personnel must manage individuals with combat stress quickly and effectively but resist the tendency to evacuate said groups.
- c. Combat and combat support personnel from command levels down to the individual soldier must be aware of the probability of high "psychiatric casualty" rates and familiarize themselves with methods of the emergency management of same. Commanders need to become aware that combat reactions are normal, temporary and not a psychiatric illness. Emphasis should be placed on the notion that the psychiatric casualty, and come to terms with the wide range and intensity of emotional feelings resulting from high stress situations. Again, all soldiers must be made aware of the physical and psychological impact of working in an integrated battlefield situation.

2. The incorporation of psychiatric casualty scenarios in ARTEPS has been proposed as a method of training, especially for behavioral science personnel (Sorenson and Myles, 1979). In such a modality, the issues of defining and recognizing a psychiatric casualty; training in the use of physical and chemical human restraints; evaluating the treatment of casualties in the field; developing working coordinate relationships with medical personnel; etc., can all be examined under simulated combat conditions. More importantly, the complexity of dealing with mass psychiatric casualties can be practiced while procedures for same are tested and developed. Focus must be placed on prioritizing combat psychiatry skills in the training of all behavioral science personnel. The use of psychiatric casualty psychodrama in major field exercises can provide a valuable training tool for all levels of the mental health chain. Rath (1979) notes that scenarios can be developed describing the expected rate, nature, flow and management of psychiatric casualties utilizing widely fluctuating data; management and treatment decisions by mental health and medical personnel can be evaluated and critiqued at the same time.

3. The use of organizational development, action research (i.e., gathering information through questionnaires about unit morale, cohesion or stress levels) and crisis intervention techniques has been proposed as a method for mental health personnel to be maximally effective during wartime (Greenbaum, et al, 1977). The proposed model suggests five areas of emphasis that can produce effective intervention during an armed conflict:

- a. Prevention rather than therapy.
- b. An advisory rather than an authoritarian approach to command.
- c. Leadership education of officers on human behavior and relationships.
- d. Use of survey research as a tool to advise units.
- e. A group or unit approach to problems rather than one oriented to individuals.

Babad and Salomon (1978) caution, however, that many of the basic principles of organizational development may not work because of the "extreme fluidity, commotion, confusion, and sense of urgency" that exists during a wartime emergency. They propose instead an emergency organizational development model which stresses a very direct, behavioral approach to solving problems, as opposed to a more long-term orientation where facilitation methods are used to promote change. The importance of both models rests on dealing with a military organization as a client and recognizing that, in war "it" is undergoing a crisis.

4. Training in stress management at all levels in the military must be strongly considered. More importantly, the protective effect of social supports as a shield against stress must be emphasized. Caplan (1978) points out that high stress in a population receiving high support will not lead to increased morbidity; high stress will only be harmful in a population receiving poor support. He further identifies social support techniques that are effective in disasters and crises or emergency situations:

- a. Use activity as a coping mechanism.
- b. Facilitate temporary withdrawal reactions.
- c. Prevent or remedy fatigue.
- d. Provide information during the crisis.
- e. Support the identity of individuals as effective and competent rather than as vulnerable or helpless.
- f. Attempt to impose order in chaos.
- g. Promote feelings of hope.
- h. Enroll casualties as helpers during the emergency.
- i. Wean casualties back to autonomy.
- j. Help casualties realize that their feelings and behavior are normal.

## CONCLUSIONS

Since the "next war" will undoubtedly be a stressful and intense conflict with a high probability of huge numbers of psychiatric casualties, the need for training in the identification, management and prevention of psychiatric casualties becomes paramount. Four major training considerations are proposed:

1. All military personnel should be trained to some degree in dealing with psychiatric casualties.
2. The use of psychiatric casualty scenarios should be implemented in major field exercises.
3. Behavioral science personnel should focus their attentions on and be trained in organizational development techniques.
4. Training in stress management should be encouraged throughout the military.

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**ANNEX B**





TREATMENT AND PREVENTION OF  
BATTLEFIELD PSYCHIATRIC CASUALTIES:  
IMPLICATIONS FOR THE NEXT WAR

Paper presented to the Combat Development  
and the Health Care Studies Directorate

12 SEPTEMBER 1980

CPT FEDERICO M. V. TAMAYO, Ph. D.

Psychiatric battlefield casualties have recently become significant concerns for US Army mental health professionals (Rath, 1979). The increasing possibility of a highly intensive, continuous and mobile conflict especially in Central Europe, poses serious considerations for both medical personnel and line commanders. Manning (1979) and Ingraham and Manning (1980) emphasize that the lethality of modern weapons ensures that only brief encounters are sufficient to generate high numbers of psychiatric casualties which will overwhelm medical facilities and deplete engaged forces. It is evident that in the "next war" psychiatric combat casualties are inevitable, and that any participating servicemember is susceptible to becoming a psychiatric casualty. Can the amount of such casualties and their rate of recovery be reasonably controlled? The purpose of this presentation is (1) to show that the technology currently exists to prevent and treat psychiatric casualties and (2) to present a model to enable effective evaluation of unit readiness in the treatment and evaluation of such casualties.

The technology for dealing with battlefield psychiatric casualties currently exists within the system. First of all, the classic principles of proximity (treating as near as possible to the locus of breakdown), immediacy (treating as soon as possible after the breakdown), and expectancy (fostering an anticipation by the soldier towards a return to duty after brief care is received) are considered applicable to most conflicts (Baker, 1975; Glass, 1954; Ingraham and Manning, 1980; Ransom, 1978; Rath, 1979). These principles as crisis intervention techniques, in a practical sense, consist of adequate food, warmth, and shelter, relative

safety for the casualty (though still in some proximity to battle); sleep induction; and directive counselling or psychotherapy which focuses on symptom alleviation/repression, unit and peer loyalty, and expectations of a return to battle as a professional soldier even in the continuing presence of fear (Rath, 1979).

Consultation principles employed by mental health professionals emphasize unit cohesion, small group integrity, and maintenance of social support systems are considered appropriate for use in the next war (Greengbaum et al, 1977., Ingraham and Manning, 1980., Rath, 1979., Shirom, 1978., Steiner and Neuman, 1978). In general, a servicemember's positive bonding with his unit and a favorable perception of its leadership can be important antidotes to the emotional stress of combat in the next war.

Recent evidence, especially from the 1973 Yom Kippur War, suggests the importance of monitoring "other life stresses" (significant life changes) in the prevention of psychiatric casualties (Ingraham and Manning, 1980). The Israelis' discovered that certain life changes (birth or death in the family, being assigned to a non-elite unit, or holding low rank) may contribute to psychiatric breakdowns in combat. Manning (1979) describes a large scale US Army field exercise where one division returned to base (for domestic problems or other life stresses) only one-tenth the number evacuated by an adversary division. The division with the low "casualty" rate apparently made a very concerted effort through its mental health resources to seek out and help resolve the personal and family concerns of its troops. The other division, the 82d Airborne, did not address these factors and experienced significantly more troops returning home before the

end of the exercise. Although the principles and technology identified are considered applicable to the next war, it is generally recognized that neither line officers nor medical personnel are presently prepared to expect, recognize, or manage significant members of psychiatric casualties (Rath, 1979). In short, the technology is present and well-tested from previous conflicts but may not be currently utilized in field training exercises. The literature is clear in recognizing that the degree of use of combat psychiatry principles (proximity, immediacy, and expectancy); the degree of unit cohesion, integrity, and social support; and the degree of other life stresses are important factors in the determination of mass psychiatric casualties. There is, however, very little focus on the interactive effects of these critical factors in the treatment and prevention of psychiatric casualties. For instance, will a unit that has strong cohesion and allows for the monitoring and treatment of other life stresses, but which is not supported by medical personnel that utilize combat psychiatric principles have more casualties than a unit that utilizes all three critical factors? A model allowing for the interaction of these three critical vectors can be illustrated as follows:

See Figure 1.

This three-dimensional model predicts that a unit best prepared for the prevention and treatment of psychiatric casualties is one that has the

highest degree of unit cohesion, lowest amount of troop life stresses, and medical support that is totally committed to the principles of proximity, immediacy, and expectancy. Conversely, a unit that has the lowest cohesion, highest amount of troop life stresses, and medical support that does not utilize combat psychiatric techniques will be most at risk for psychiatric casualties. The model presented can be used in conceptually evaluating unit readiness to deal with psychiatric battlefield casualties and, if expanded, could possibly be utilized in casualty predictions. The advantage of the multidimensional approach is its emphasis on all three critical factors collectively. This scheme avoids stressing one factor at the expense of others.

To review, the amount of psychiatric casualties in the next war will be considerable and will most likely occur within a few hours of the initial engagement. Although such casualties are inevitable, much can be done to reduce the probability that a soldier will break down. Furthermore, the rapid and eventual return to duty of a psychiatric casualty is also possible. In fact, Ingraham and Manning (1980) suggest that a recovered psychiatric casualty is a valuable, if not critical, resource in a highly intensive, continuous, and mobile war where casualties are extremely high and replacements from the rear very slow. This presentation emphasized that the technology for treatment and prevention already exists but is presently not effectively implemented. A model, therefore, was presented to help evaluate unit readiness in dealing with battlefield psychiatric casualties. The model stressed the need to examine three critical factors (use of combat psychiatry techniques; degree of group cohesion, integrity, and social support; and identification of other life stresses) on an equal and interactive basis. In this manner, mental health professionals, line commanders, and medical personnel can all contribute towards "conserving the fighting strength."

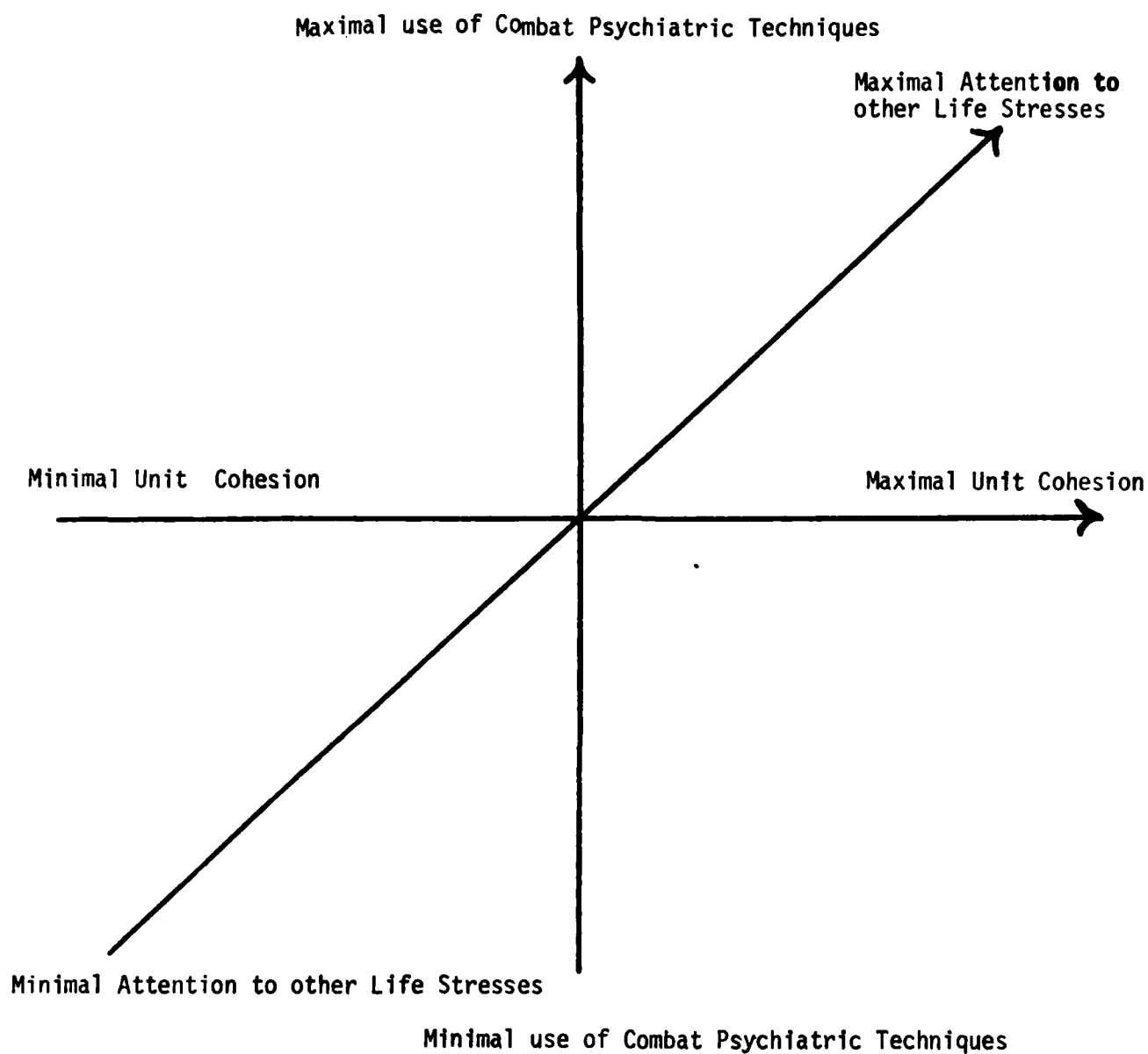


FIGURE 1: Three Dimensional Model for Evaluating Unit Readiness in the Treatment and Prevention of Psychiatric Casualties

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**ANNEX C**



## SAMPLE SITUATION STRESS CARDS

1. Fear of night.
2. Moderate insomnia.
3. Transitory inability to retain feces or urine.
4. Heightened willingness or desire to share beds with comrades.
5. Panic run.
6. Intense abdominal pain during shelling.
7. Fear of death.
8. Urgent and frequent desire to urinate.
9. "Freezing" over a weapon throughout the course of battle.
10. Feelings of resentment.
11. Trembling and shaking during close shelling or bombing.
12. Fear of incapacitation by fear.
13. Apprehension, progressively more intense as each battle approaches.
14. Fear of exhibiting fear.
15. Moderate headache induced by tension.
16. Frequent vomiting.
17. Faintness or giddiness.
18. Persistence tremor after 4 months of combat.
19. Lassitude and muscular weakness.
20. Alternating hot and cold sensations.

ANNEX D



PERFORMANCE  
TEST 1

ADMINISTER EMERGENCY MEDICAL AND PSYCHIATRIC TREATMENT  
UNDER FIELD CONDITIONS

TEST CONDITION: The soldier must complete both situations in this performance test. Each situation will depict a realistic situation which could require field medical personnel to apply various emergency medical treatment techniques as the first AMEDD individual on the scene. Individual casualties may be suffering from more than one injury or condition which include as a minimum an open wound, a fracture, battle fatigue, and shock. Between both situations, soldiers must treat either three or four casualties.

EVALUATOR INSTRUCTIONS: Give the soldier the following instructions:

- a. Situation 1. "YOU ARE A MEDIC WITH A (TYPE) UNIT IN (LOCATION) DURING (TIME OF YEAR). YOUR UNIT HAS RECEIVED (TYPE) FIRE AND SOLDIER (POINT TO LOCATION) HAS BEEN WOUNDED. HE HAS A (WOUND) AND (WOUND). HE IS (IS NOT) IN EXTREME PAIN. THE CASUALTY IS IN A SMALL DEPRESSION. THE ENEMY IS (LOCATION/DISTANCE). ASSISTANCE IS (IS NOT) AVAILABLE TO MOVE THE CASUALTY AFTER YOU HAVE TREATED HIM. TAKE APPROPRIATE ACTION."
- b. Situation 2. "YOU ARE A MEDIC WALKING BACK TO YOUR AID STATION. ON THE WAY YOU COME ACROSS TWO CASUALTIES APPARENTLY RESULTING FROM A VEHICLE ACCIDENT. ONE CASUALTY HAS A (INJURY) AND IS CONSCIOUS (UNCONSCIOUS). THE OTHER HAS THE FOLLOWING SYMPTOMS (SYMPTOMS OF AN INJURY AND SHOCK). TREAT THESE INDIVIDUALS AS BEST YOU CAN."

Test Standards: In both situations, the soldier must:

- a. Evaluate the situation.
- b. Perform the appropriate life saving steps.
  - (1) Clear the airway, restore breathing.
  - (2) Stop bleeding.
  - (3) Administer shock control.
  - (4) Apply dressings/bandages.
- c. Perform all actions in an appropriate sequence consistent with the situation. In a multiple casualty situation, generally accepted guidelines for treatment in order of severity must be followed.
- d. Utilize combat psychiatry principles.
- e. Protect self and patient from enemy as dictated by situation.

Test Standards: In both situations, the soldier must:

- a. Avoid suggestion of organic or psychiatric illness.
- b. Maintain an attitude of firm kindness and avoid display of oversympathy and concern.
- c. Instill an impression that RTD is highly probable.
- d. Allow the client to ventilate freely.
- e. Suggest to client that symptoms and feelings are normal reactions to combat situation.
- f. Avoid making unnecessary referrals or evacuation rearward.
- g. Use such techniques as suggestion, reassurance, sedation, relaxation, or hypnosis.
- h. Recommend alleviation of deprivations (change of clothing, hot shave & shower, sleep, etc).



PERFORMANCE  
TEST 2

ADMINISTER EMERGENCY COMBAT PSYCHIATRIC TREATMENT  
UNDER FIELD CONDITIONS

TEST CONDITION: The soldier must complete both situation in this performance test. Each situation will depict a realistic situation which could require behavioral science personnel to apply emergency psychiatric treatment techniques in the battalion aid station.

EVALUATOR INSTRUCTIONS: Give the soldier the following instructions:

- a. Situation 1. YOU ARE A 91G WITH THE BATTALION AID STATION IN CENTRAL EUROPE DURING THE SUMMER. A SOLDIER IN EXTREME EMOTIONAL DISTRESS HAS JUST BEEN REFERRED TO YOU. HE IS NOT SUFFERING FROM ANY APPARENT MEDICAL PROBLEMS. TAKE APPROPRIATE ACTION.
- b. Situation 2. YOU ARE A 91G IN THE BATTALION AID STATION. A SOLDIER HAS BEEN MEDICALLY CLEARED. HE IS THE ONLY SURVIVOR FROM HIS PLATOON. HE HAS BEEN IN INTENSE, CONTINUOUS ENEMY FIRE FOR 36 HOURS. TREAT THIS INDIVIDUAL AS BEST YOU CAN.

PERFORMANCE  
TEST 3

ADMINISTER EMERGENCY PSYCHIATRIC TREATMENT TO A FELLOW  
SOLDIER IN COMBAT

TEST CONDITION: The soldier is required to apply emergency psychiatric treatment to a fellow soldier experiencing combat stress reaction.

EVALUATOR INSTRUCTIONS: Give the soldier the following instructions: YOU ARE AN INFANTRYMAN ON A RECONNAISSANCE PATROL WITH ANOTHER SERVICE MEMBER. SUDDENLY, YOUR PARTNER BECOMES DISORIENTED, STARTS TO WANDER AIMLESSLY, CRIES, SPORADICALLY DROPS HIS WEAPON, AND BEGINS TO SHAKE UNCONTROLLABLY. TAKE APPROPRIATE ACTION. REMEMBER YOU ARE TACTICAL AND MUST MAINTAIN SOUND AND LIGHT DISCIPLINE.

Test Standards:

- a. At all times, SM must maintain sound and light discipline.
- b. SM must protect self and buddy from enemy.
- c. SM must develop a field expedient way to restrain and quiet his buddy.

PERFORMANCE  
TEST 4

CONDUCT A COMMAND CONSULTATION BRIEFING TO A BATTALION  
COMMANDER

TEST CONDITION: The behavioral science personnel is required to conduct a formal briefing to RDF Bn commander whose unit has just been designated to move out to FRG within 48 hours. The CMD anticipates that his unit will receive intense, continuous fire within an integrated battlefield and his unit will be highly mobile. He anticipates high psychiatric casualties and requests your assistance in preventing these problems. You have 5 minutes to prepare a 10 minute briefing and answer question on what the company can do to prevent and treat battlefield psychiatric casualties.

Test Standards:

- a. Principles of combat psychiatry.
- b. Sleep for leaders.
- c. Cross-training at all levels.
- d. Importance of unit cohesion.
- e. Minimizing "other life" stresses.
- f. Identification of normal and pathologic battle reactions.

## EXERCISES

- \_\_\_\_\_ 1. With which of the following organizations does the good combat soldier, as a member thereof, form the strongest emotional bonds?
  - a. Nation.
  - b. Division.
  - c. Company.
  - d. Platoon.
- \_\_\_\_\_ 2. In order to function well in combat, what degree of kind of conscience should a soldier have?
  - a. High or severe.
  - b. Moderate or medium level.
  - c. Low or very liberal.
  - d. Essentially none.
- \_\_\_\_\_ 3. In our culture, sickness confers upon the incapacitated individual an honorable reason for NOT fulfilling his obligations. This immunity from responsibility is called:
  - a. Malingering.
  - b. Hysteria.
  - c. Secondary gain.
  - d. Primary gain.
- \_\_\_\_\_ 4. Combat exhaustion is characterized clinically by signs and symptoms that are:
  - a. Definitely indicative of a morbid predisposition toward psychosis.
  - b. Definitely indicative of psychic trauma in childhood.
  - c. Rather diffuse and quite variable.
  - d. Rather well defined and stable.

\_\_\_\_\_ 5. Suppose that after a battle a lightly wounded soldier is about to be evacuated. Which of the following is most likely to be the attitude of each of his comrades who are to remain on combat duty?

- a. Fear of possibly being the next to be so injured.
- b. Envy of the good fortune of the one being evacuated for for a nonserious cause.
- c. Delight that the wounded soldier is to be evacuated.
- d. Sorrow or remorse over the wounded soldier's mishap.

\_\_\_\_\_ 6. About what percent of the psychiatric patients salvaged in the combat division area may be expected to be restored to full combat duty?

- a. 85.
- b. 50.
- c. 35.
- d. 10.

\_\_\_\_\_ 7. Emotionally disturbed patients in the division area should wear:

- a. "Whites."
- b. Pajamas.
- c. Convalescent suits.
- d. Regular Uniforms.

\_\_\_\_\_ 8. Which of these words best describes cause in relation to combat exhaustion?

- a. Suggested.
- b. Infectious.
- c. Insidious.
- d. Multiple.

9. Which of the following choices best describes the attitude most generally seen in seriously wounded combat soldiers soon after they have been relieved of physical pain?

- a. A covert and frequently overt expression of gladness or well-being at having honorably escaped the onerous combat situation.
- b. A basic, quiet, detached, unconcerned attitude toward most persons and occurrences which is not attributable to sedation.
- c. Deep feelings of guilt and remorse on having to be evacuated away from comrades-at-arms.
- d. An intense preoccupation with fear of permanent disfigurement of incapacitation.

10. In order best to preserve the fighting strength of a soldier's unit, at what point in the soldier's development of a pathologic battle reaction should he be medically removed from combat? As soon as:

- a. His pathologic battle reaction has progressed to a point just short of psychosis.
- b. His pathologic battle reaction incapacitates him for combat duty.
- c. His pathologic battle reaction reduces his combat effectiveness.
- d. Possible after his reaction to battle stress is diagnosed as pathologic.

11. Responsibility for prevention of cases of combat exhaustion in a unit of company size rests with the:

- a. Division psychiatrist.
- b. Division surgeon.
- c. Battalion surgeon.
- d. Unit commander.

\_\_\_\_\_ 12. Emotionally disturbed soldiers needing only temporary rest before returning to duty may be held at the aid station for a period of time that should not normally exceed \_\_\_\_\_ hours.

- a. 72.
- b. 48.
- c. 24.
- d. 12.

\_\_\_\_\_ 13. When a combat soldier with psychosomatic complaints is returned to duty immediately after first presenting his case to a medical officer in his division, which of the following will most probably result?

- a. The soldier will become and will remain symptom free as combat progresses.
- b. The soldier will learn to live with his symptoms.
- c. The soldier will feel increasingly guilty and inferior and will probably soon break down.
- d. The soldier will be additionally aggravated until he elaborates and crystalizes a full-blown neurosis.

\_\_\_\_\_ 14. When performing duties of care and treatment of emotionally disturbed patients in division medical facilities, enlisted specialists should wear:

- a. "Whites."
- b. Pajamas.
- c. Convalescent suits.
- d. Regular uniforms.

- \_\_\_\_\_ 15. Which of the following most highly motivates a veteran combat soldier to do battle with the enemy?
- a. Loyalty to his unit.
  - b. A firm belief in democracy.
  - c. Self-pride.
  - d. Hatred of the enemy.
- \_\_\_\_\_ 16. At the onset of World War II, which of the following is most applicable to the view of emotional disruption occurring in combat?
- a. Traumatic neurosis.
  - b. Physical fatigue.
  - c. Character disorder.
  - d. Combat exhaustion.
- \_\_\_\_\_ 17. Through proper screening, evaluation, and treatment, the theater health service can return to duty approximately what percent of all psychiatric patients evaluated in the theater?
- a. 90%.
  - b. 60%.
  - c. 30%.
  - d. 10%.
- \_\_\_\_\_ 18. Which of the following is the major cause for most cases of combat exhaustion?
- a. The lowering of the physiologic state of the body by disease, malnutrition, or exposure to climatic extremes.
  - b. The failure of the individual to derive adequate emotional and material support from his environment.
  - c. The omnipresent fear of death.
  - d. Extreme physical fatigue.



\_\_\_\_\_ 19. The term "combat exhaustion" applies to:

- a. A transient, fluid, psychologic breakdown which renders the victim ineffective in combat.
- b. A pathologic condition of brain tissue subjected to repeated and prolonged exposure to explosions such as shellfire or bombing.
- c. A chronic traumatic neurosis in which the soldier is incapable of functioning adequately in a combat situation.
- d. An acute traumatic psychosis caused by battle stress.

\_\_\_\_\_ 20. Unless clinical findings dictate otherwise, every psychiatric patient in the division will be expected to:

- a. Return to duty.
- b. Perform work details.
- c. Police his immediate area.
- d. Perform all the acts listed above.

COLUMN I  
(Reaction to Combat Stress)

COLUMN II  
(Combat Classification)

21. \_\_\_\_\_ Fear of night.
22. \_\_\_\_\_ Moderate insomnia.
23. \_\_\_\_\_ Transitory inability to retain feces or urine.
24. \_\_\_\_\_ Heightened willingness or desire to share beds with comrades.
25. \_\_\_\_\_ Panic run.
26. \_\_\_\_\_ Intense abdominal pain during shelling.
27. \_\_\_\_\_ Fear of death.
28. \_\_\_\_\_ Urgent and frequent desire to urinate.
29. \_\_\_\_\_ "Freezing" over a weapon throughout the course of battle.
30. \_\_\_\_\_ Feelings of resentment.
31. \_\_\_\_\_ Trembling and shaking during close shelling or bombing.
32. \_\_\_\_\_ Fear of incapacitation by fear.
33. \_\_\_\_\_ Apprehension, progressively more intense as each battle approaches.
34. \_\_\_\_\_ Fear of exhibiting fear.
35. \_\_\_\_\_ Moderate headache induced by tension.
36. \_\_\_\_\_ Frequent vomiting.
37. \_\_\_\_\_ Faintness of giddiness.
38. \_\_\_\_\_ Persistence tremor after 4 months of combat.
39. \_\_\_\_\_ Lassitude and muscular weakness.
40. \_\_\_\_\_ Alternating hot and cold sensations.

- a. Normal
- b. Pathologic

1. d.
2. b.
3. d.
4. c.
5. b.
6. b.
7. d.
8. d.
9. a.
10. b.
11. d.
12. c.
13. b.
14. d.
15. a
16. a.
17. a.
18. b.
19. a
20. d.

21. b.
22. a.
23. a.
24. a.
25. b.
26. a.
27. a.
28. a.
29. b.
30. a.
31. a.
32. a.
33. a.
34. a.
35. a.
36. b.
37. a.
38. a.
39. a.
40. a.

ADDITIONAL SITUATIONS FOR COPE



ADDITIONAL SITUATIONS FOR COPE:

1. MOPP Gear: patients & treaters name tags.
2. Sign language for communications
3. Atropine psych  
Role play  
Differentiate Heat, Chemical, Antidote, Stress reactions  
Take history
4. Hostages
5. P.O.W.s
6. Elongate to 24 Hrs.
7. In field
8. Medical logistics: S4
9. Evacuation chain: /on site care  
Who is responsible? Train  
How set in place?
10. Introduce psychiatric casualties into:  
EFMB  
C 4 Combat Casualty Care Course  
Field exercises: NCO  
ARTEPs Off Basic  
ROTC
11. Time Management
12. Stack patient load
13. Group de-briefing
14. Group re-integration
15. Use of mildly wounded patients for management.
16. CARDEX: Pictures/text
17. Debriefing of all participants

18. Differences as function of: Sex, race/ethnic, size

19. Violent patients

20. Contact/touch/caring gestures

21. Be active

22. Rape/sexual assault

23. Foreign nationals/destroyed property

24. Cancel appointments:

Use regular sick call flow for massing of presenting patients; no  
warning offered.

CONTRIBUTIONS FROM PARTICIPANTS





1. PREVENTION AND TREATMENT OF PSYCHIATRIC CASUALTIES  
2.  
3. IN THE EVENT OF A WAR IN EUROPE  
4.  
5.  
6.  
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8.  
9.

10.  
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13. GREGORY LUCAS BELENKY, M.D.  
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15. LIEUTENANT COLONEL, MEDICAL CORPS, UNITED STATES ARMY  
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19. PAUL NEWHOUSE, M.D.  
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21. CAPTAIN, MEDICAL CORPS, UNITED STATES ARMY  
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25. FRANKLIN DEL JONES, M.D.  
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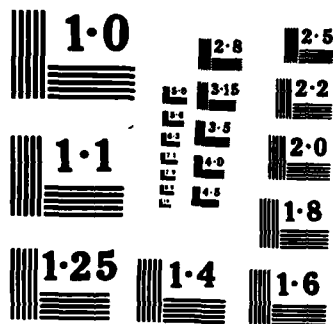
27. COLONEL, MEDICAL CORPS, UNITED STATES ARMY  
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33.

34. The prevention and treatment of psychiatric casualties in the  
35. event of a war in Europe requires a sensible doctrine of human  
36. physical and emotional limits and the consideration of these limits  
37. when formulating tactical and strategic plans.  
38.

39. Soviet plans and capabilities in the event of a war in Europe  
40. will determine the form and intensity of such a conflict. Thus, an  
41. appreciation of the physical and emotional stresses of a future high  
42. intensity war in Europe can be gained from studying Soviet doctrine  
43. and capabilities. Soviet doctrine calls for continuous operations  
44. including conventional, airmobile, and airborne assaults coupled  
45. with massed, coordinated nuclear and chemical strikes throughout the  
46. depth of NATO's deployment. Strategically, Soviet forces will focus  
47. on NATO command, control, communications, and intelligence.  
48. Tactically, Soviet forces will attempt to disrupt the small combat  
49. unit of 3-40 persons. Despite the planned liberal use of weapons of  
50. mass destruction, the Soviets are keenly aware of the psychological  
51. factors in combat, and they seek to maximize the psychological  
52. effect of their attack through complete surprise. The Soviets  
53. calculate in terms of psychological shock not death. This is  
54. particularly evident at the level of the small forward combat unit.  
55. Here the Soviets plan a final conventional rolling artillery barrage  
56. finished by a salvo of rockets. Their intent is not to kill but  
57. rather to induce a state of battlefield paralysis in NATO forces.  
58. Battlefield paralysis means the temporary inability to use ones  
59. weapon. The Soviets calculate that NATO soldiers would be unable,  
60. following the final barrage, to use their weapons for from 30

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61. seconds to 4-5 minutes depending upon the complexity of the weapon.  
62. Thus, a machine gunner would be unable to fire for 30 seconds, an  
63. anti-tank gunner for 1 minute 45 seconds, and a tank gunner for 4-5  
64. minutes. In the Soviet plan, first echelon attacking forces would  
65. advance immediately behind the rolling barrage with smoke and flame  
66. throwers. Their aim would be to pass through or bypass defending  
67. NATO units rather than to engage them. First echelon forces would  
68. then proceed rapidly to the rear to further disrupt command,  
69. control, communication, and intelligence, capture airfields, capture  
70. petroleum depots, and capture NATO nuclear means, and also link-up  
71. with Soviet airmobile and airborne forces. Remaining NATO forward  
72. defending units would then be mopped up by second echelon Soviet  
73. forces. The Soviets hope to produce a swift and sudden collapse of  
74. NATO, conquer Europe, and sue for peace. They would thus reduce the  
75. risk of the use of nuclear weapons spreading beyond Europe, and  
76. decrease the likelihood that the West's economic strength could be  
77. effectively brought to bear upon the outcome of the war.  
78.

79. For the Soviets, the use of nuclear weapons is a practical  
80. rather than a moral issue. The Soviets view nuclear weapons as  
81. enabling senior, rear echelon military and even political figures to  
82. directly influence the outcome of the battle. In the event of a war  
83. in Europe, the Soviets would use nuclear weapons at the outset if  
84. NATO were in garrison, and hence the location of NATO command,  
85. control, communication, intelligence, and nuclear means were known.  
86. They would use nuclear weapons after 1-2 days if NATO were on alert  
87. and its forces dispersed. This 1-2 day lag would allow the Soviets  
88. to establish the new location of NATO targets of interest through  
89. overflights. An initial attack would be launched by the strategic  
90. missile forces, and the delayed attack by a combination of strategic  
91. missile forces and fighter bombers.  
92.

93. Soviet doctrine calls for, and Soviet means allow for,  
94. continuous operations in the event of a war in Europe. Through the  
95. use of night vision devices and superior numbers, the Soviets plan  
96. to fight continuously while allowing adequate rest for spent Soviet  
97. units. In contrast, for NATO a continuous attack by the Soviets  
98. means that all NATO forces will be continuously engaged. It is  
99. therefore of great relevance to study the effects of fatigue on  
00. mental and physical performance, and thus to gain an understanding  
01. of human physiological limits during continuous combat. In Exercise  
02. Early Call I and II, the Army Personnel Research Establishment of  
03. the British Ministry of Defence studied the mental and physical  
04. effects of 9 days of simulated continuous combat. These studies  
05. were conducted by Dr. Diana Haslam with the assistance of Drs.  
06. Martin Allnutt and Peter Abraham. In Early Call I, three platoons  
07. from The Parachute Regiment engaged in simulated continuous combat  
08. in the field. One platoon was allowed 3 hours sleep each night, one  
09. platoon 1 1/2 hours sleep each night, and one platoon was not  
10. allowed to sleep at all. The platoon not sleeping at all became  
11. militarily ineffective after 48-72 hours, and all of its personnel  
12. were withdrawn from the exercise by the fourth day. The platoon  
13. sleeping 1 1/2 hours each night became militarily ineffective after  
14. 3-4 days, but approximately half of that platoon did not finish the  
15. exercise. The platoon sleeping 3 hours each night remained  
16. marginally effective for the entire 9 days, and completed the  
17. exercise largely intact. Overall, cognitive abilities were most  
18. affected by sleep deprivation, while physical strength and endurance  
19. were relatively unaffected even by complete deprivation of sleep.  
20. Since military performance declined even in the platoon sleeping 3

121. hours each night, Drs. Haslam and Allnutt concluded that 3 hours  
122. sleep each night was less than the minimum required to sustain  
123. effective performance during continuous combat. In Exercise Early  
124. Call II, the British continued their studies of sustained  
125. operations. In this exercise, trial troops were not allowed to  
126. sleep at all for the first 90 hours, and then were allowed 4 hours  
127. of sleep on subsequent nights for the remaining 6 days of the  
128. exercise. As one would expect from the results of Early Call I,  
129. cognitive abilities and military performance declined dramatically  
130. during the first 90 hours. The trial troops were judged to be  
131. militarily ineffective after the first 72 hours without sleep.  
132. However, there was a dramatic recovery of performance after even the  
133. first 4 hour night of sleep, and further recovery after subsequent  
134. nights. In fact, performance returned to near baseline levels after  
135. the fourth night of four hours of sleep. EEG recordings from the  
136. trial troops indicated that REM and Stage 4 sleep occurred in near  
137. normal amounts, and this was taken to indicate that when sleep time  
138. is limited, sleep becomes more efficient. Early Call II was meant  
139. to be a more realistic simulation of a future war in Europe than was  
140. Early Call I. In such a war, little sleep would be possible during  
141. the first four days, but then hopefully the situation would  
142. stabilize sufficiently to allow some sleep. Drs. Haslam and Abraham  
143. concluded from Early Call II that four hours sleep was sufficient to  
144. maintain effective military performance during continuous combat,  
145. and further that even after prolonged total sleep deprivation even a  
146. little sleep was of significant value.

147.  
148. The findings of the British in Early Call I and II are of great  
149. interest. They indicate clearly the importance of adequate sleep in  
150. maintaining effective military performance especially in command and  
151. control personnel. Effective planning and performance even at the  
152. level of the small forward combat unit requires intact cognitive  
153. abilities. At least 4 hours sleep each night appears to be  
154. required. Perhaps the importance of adequate rest for command and  
155. control personnel seems so obvious as not to be worth belaboring.  
156. However, in the American forces, even in exercises, it is the  
157. command and control personnel who sleep least, with the battalion  
158. commanders not sleeping at all for several days at a time. Thus, if  
159. NATO forces are to survive the initial Soviet onslaught and remain  
160. militarily effective, a sensible doctrine of human physical limits  
161. must be promulgated for, and ingrained into, command and control  
162. personnel at all levels.

163.  
164. In addition to a sensible doctrine of human physical limits, we  
165. must have a sensible doctrine of human emotional limits as well. It  
166. is a truism, but one of importance, that every man has a point  
167. beyond which he cannot go, both physically and emotionally. In our  
168. concern with the performance of weapon systems and for human  
169. physical performance we too often lose sight of human emotional  
170. limits, and of the factors which expand and contract them. A great  
171. deal of useful information about human emotional limits can be  
172. gleaned from the study of psychiatric casualties in combat.

173.  
174. In order to understand psychiatric casualties, it is necessary  
175. to grasp the phenomena of normal adaptation to combat. For this we  
176. must turn to the literature from the Second World War. In moderate  
177. intensity war there is a definite curve of adaptation. Initial  
178. adaptation occurs within the first week of combat exposure, with a  
179. subsequent more gradual improvement in performance which peaks at 30  
180. days. After this there is a very slow but definite decline in

181. combat performance. The curve of incidence of psychiatric  
182. casualties is the complement of the curve of adaption. Psychiatric  
183. casualties are high on initial exposure, during the shock of initial  
184. engagement, with the initial peak of incidence coming in the the  
185. first week of combat exposure. Incidence of psychiatric casualties  
186. then declines reaching a nadir at 30 days of combat. Subsequently,  
187. paralleling the gradual decline in combat effectiveness, there is a  
188. gradual increase in the incidence of psychiatric casualties.

189.  
190. Psychiatric casualties occur in two distinct forms correlated  
191. with the initial and later peaks of incidence. The first form of  
192. psychiatric casualty is combat reaction. Combat reaction occurs in  
193. the first few hours to days of a high intensity war. Symptoms are  
194. those of free-floating, unfocused anxiety which persists for 24-48  
195. hours. Combat reaction is caused by the failure of unit cohesion to  
196. solidify upon initial exposure to combat. Effective treatment  
197. consists of a 24-48 hour respite near the front with a rapid return  
198. to, and reintegration into, the combat unit. This re-establishes  
199. the soldier's links to his comrades and enhances the cohesion of the  
200. unit as a whole. If effective treatment is not applied, then the  
201. anxiety will crystalize along the lines of the premorbid personality  
202. and there is a high likelihood that the soldier will become  
203. permanently disabled. The second form of psychiatric casualty is  
204. combat fatigue. Combat fatigue occurs after weeks or months of  
205. exposure to moderate intensity war. The symptoms, treatment, and  
206. risk of chronic disability are similar to those of combat reaction.  
207. Combat fatigue is caused by the disruption of unit cohesion  
208. secondary to the attrition of unit personnel consequent to prolonged  
209. exposure to combat.

210.  
211. Combat reactions occurring early during the first few hours to  
212. days of a high intensity war are likely to be the dominant form of  
213. psychiatric casualty in the event of a war in Europe. The 1973  
214. Arab-Israeli War has been used as a model of a high intensity future  
215. war. Combat reactions were the dominant form of psychiatric  
216. casualty during this conflict. Retrospective studies by the  
217. Israelis of the 1973 war indicate that there is an intimate  
218. relationship between good military performance on the one hand and  
219. psychiatric casualties on the other. In fact, heroism and  
220. psychiatric breakdown in combat appear to be mirror image syndromes.  
221. In a study by Dr. Shabtai Noy, Israeli soldiers suffering  
222. psychiatric breakdown were compared to a control group that had not  
223. broken down. Dr. Noy found that personality made little difference  
224. in predisposing to psychiatric breakdown. Rather, situational and  
225. social factors accounted for most of the variance. Thus, soldiers  
226. from units with poor cohesion, poor leadership, who lacked  
227. confidence in their military skills, and who came from unstable  
228. families, and transitional communities were more likely to have  
229. suffered a psychiatric decompensation in battle. In a complementary  
230. study, Dr. Reuven Gal compared Israeli soldiers decorated for  
231. heroism with a control group not so decorated. Again, personality  
232. appeared to be of little consequence. As Dr. Gal has said: "We are  
233. all equally at risk for heroism." Situational and social factors  
234. appeared to be the major determinant of good military performance  
235. and heroism. Thus, soldiers from units with good cohesion, good  
236. leadership, who had confidence in their military skills, and who  
237. came from stable families and stable communities were likely to  
238. perform well in combat and even to be heroes. This complementarity  
239. between the factors promoting heroism on the one hand and  
240. predisposing to psychiatric breakdown on the other is not unique to

241. the Israeli Army. Similar phenomena have been observed in the  
242. American and German Armies in the Second World War, in the Egyptian  
243. Army in 1967 and 1973, and in the Nigerian Army during the 1966-1970  
244. Nigerian Civil War.  
245.

246. Combat psychiatry as a field has been in steady evolution since  
247. the beginning of this century. With each succeeding war we have  
248. added to our knowledge and refined and reinforced existing concepts.  
249. Psychiatric casualties in combat have been a successively more  
250. important problem. Resistance to combat stress depends upon  
251. cohesive links to friends and comrades within the small combat unit.  
252. As warfare has become more lethal and more intense, as nations have  
253. increasingly been forced to rely upon mass armies, brought together  
254. on an ad hoc basis, the integrity of the small combat unit has  
255. become increasingly fragile. Hence, the incidence of psychiatric  
256. casualties increases. Witness the Israeli experience in 1973 in  
257. which of their first 1500 casualties 900 were neuropsychiatric.  
258. Also, it is clear that good military performance and psychiatric  
259. breakdown are closely-linked complementary phenomena, and that this  
260. is true across a broad range of disparate cultures.  
261.

262. Several facts suggest that good military performance, heroism,  
263. and psychiatric breakdown in combat are all manifestations of the  
264. dynamics of male group bonding. This is suggested by the  
265. relationship of good military performance, heroism, and psychiatric  
266. breakdown to the integrity or lack thereof of the small combat unit  
267. of 3-40 persons, the irrelevance of personality to either heroism or  
268. psychiatric breakdown, and the cross-cultural homogeneity of the  
269. behavioral manifestations of, and factors predisposing to, heroism  
270. and psychiatric breakdown. Thus, resistance to combat stress may  
271. depend upon the phylogenetically old phenomena of primate male group  
272. bonding, and therefore may be very much a part of our extended  
273. pre-history as hunter/gatherer groups. Certainly, the emphasis upon  
274. morale is not new. The Chinese general, Sun Tzu, writing in 400  
275. B.C. stressed the importance of psychological group factors in  
276. successful military operations. Napoleon said that the moral is to  
277. the physical as 2 to 1. Du Pique, writing toward the end of the last  
278. century, said that four superior men who do not know each other will  
279. fail to attack a tiger, but four average men who know each other  
280. well will attack resolutely.  
281.

282. Thus, primarily because of the vulnerability of the small  
283. combat unit, psychiatric casualties in the event of a war in Europe  
284. are likely to be high. Because of the probable continuous nature of  
285. the battle, fatigue will be a prominent factor in such casualties.  
286. Hence, treatment by means of a respite near the front with a rapid  
287. return to the combat unit should be very effective. However,  
288. treatment depends upon intact command and control, intact channels  
289. of evacuation and return, and safe areas. None of these are likely  
290. to be available in any quantity in the first few hours and days of a  
291. war in Europe. Thus, treatment, though potentially very effective,  
292. may be impossible to apply. Therefore, to reduce attrition of  
293. forces due to psychiatric breakdown, and to reduce the likelihood of  
294. chronic psychiatric disability, prevention of psychiatric casualties  
295. assumes primary importance.  
296.

297. Prevention of psychiatric casualties, and hence improvement of  
298. military performance and promotion of heroism, can be achieved in  
299. several ways. First, steps can be taken to strengthen the primary  
300. group, that is, to strengthen the small combat unit of 3-40 persons.



301. This can be accomplished by improving small unit cohesion, improving  
302. small unit leadership, increasing confidence in military skills,  
303. promoting family and community stability, and adopting tactics and  
304. strategy that enhance the survivability of the small combat unit.  
305. Second, means can be established to repair primary group damage,  
306. that is, to restore the cohesion and the integrity of the small  
307. combat unit after an intense battle. This can be accomplished by  
308. training unit commanders to gather their men after each battle and  
309. with them reconstruct on a minute by minute basis the course of the  
310. battle. Such reconstructions will rebuild cohesion, and improve  
311. confidence in, and quality of, leadership. Also, in so far as  
312. possible, unit integrity and cohesion should be supported and  
313. rebuilt by returning psychiatric casualties to their units, and  
314. training medical personnel in the detection and prevention of  
315. evacuation syndromes.

316.  
317. In conclusion, men have definite physical and emotional limits.  
318. A future war in Europe will produce levels of stress which, unless  
319. prepared for in advance, will easily exceed these limits. At a  
320. minimum, soldiers in combat need sleep and need the friendship and  
321. support of their comrades if they are to resist breakdown and to  
322. perform well in battle. Through thorough preparation and a sensible  
323. doctrine of human physical and emotional limits, we can hope to  
324. deter, and if necessary to fight and win, a theater nuclear and  
325. chemical war in Europe.

**COMBAT PSYCHIATRY**

**Nigeria**

**Israel**

**Federal Republic of Germany**

**United Kingdom**

**13 June - 19 July**

**1978**

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## Introduction

Combat psychiatric casualties are sizable sources of casualties in modern warfare. They were first clearly described in the beginning of this century. Much is known about their nature, prevention, and treatment from anecdotal accounts, from trial and error clinical treatment, and from retrospective studies. The twin formulae of prevention based upon good morale, and treatment based upon immediate attention near the front followed by a rapid return to combat duty, are useful distillations of the experiences of the past. However, these formulae convey the false impression that we know all there is to know about the nature, the prevention, and the treatment of combat psychiatric casualties. As modern armored conflicts become shorter, more intense, and more fluid, the nature of combat psychiatric casualties appears to be changing. Changes in the nature of such casualties may require changes in the means of their treatment and prevention. Also, as modern armored conflicts become shorter, more intense, and more fluid, treating psychiatric casualties near the front and returning them to duty may become difficult. Finally, the importance of combat psychiatry, while remembered in principle, tends to be forgotten in the practical business of planning for possible future wars.

Recently I was able to explore some of these issues during visits to Nigeria, Israel, the Federal Republic of Germany, and the United Kingdom. In Nigeria, I discussed combat psychiatric casualties arising during the Nigerian Civil War (1966-1970) with the psychiatric consultant

to the Nigerian Armed Forces. In Israel, I attended the Second International Conference on Psychological Stress and Adjustment in Time of War and Peace, which was held in Jerusalem. At this conference, I presented a paper on hallucinations during sustained combat operations based on data I collected during the British study, Exercise Early Call I, and I heard papers by Israeli military and civilian behavioral scientists on behavior in combat, and on combat psychiatry based on the experiences of the 1973 Arab-Israeli War. Following the conference, I went to Tel Aviv to meet psychiatrists and psychologists of the Israeli Defense Force (IDF). During the discussions with the IDF, I learned more about Israeli psychiatric casualties during the 1973 War, and learned of Israeli plans for management of such casualties in the event of a future war. In the Federal Republic of Germany I discussed plans for the management of combat psychiatric casualties, with the psychiatric consultants of the United States Army Medical Command-Europe (USAMEDCOM-EUR). In the United Kingdom, I discussed combat psychiatry with the psychiatric consultants of the Royal Army Medical Corps (RAMC) and then I visited the Army Personnel Research Establishment (APRE) to learn of their more recent study of sustained combat operations, Exercise Early Call II.

Out of these meetings and discussions emerged confirmation of the basic principles of combat psychiatry, new information which refines these principles, suggestions of important, unanswered questions on the nature, treatment, and prevention of combat psychiatric casualties, indications that the nature of combat psychiatric casualties may be changing, and a growing uncertainty as to how the accepted principles

of combat psychiatry, as refined by recent experience, can be applied practically under the fluid and mobile conditions of contemporary armored warfare.

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Lagos, Nigeria 13 - 18 June 1978

During the Nigerian Civil War (1966-1970), there were no psychiatric services available to the combatants of either side. There were significant numbers of combat psychiatric casualties and other behavioral problems. Any soldier who became odd or troublesome was indiscriminately evacuated to the rear. These men were no longer welcome in their units. Once evacuated, they were interred in holding camps, where they were clothed and fed, where they were not required to work and where they received no treatment. By the end of the war in January of 1970, there were 6,000 men in these camps. This represents 2.4% of the total armed forces of 250,000 men. Over time, some of the men were returned to active duty. As of June 1978, there were still 3,000 men in these camps, or 1.2% of the original strength of the armed forces. The men remaining in the camps are gradually being admitted to the military psychiatric hospital in Lagos, and are being diagnosed, treated, and discharged from the armed forces. Some severely disabled soldiers are given cash payments upon discharge. No pensions are ever granted.

The Nigerian Civil War revealed the natural history of untreated combat psychiatric casualties. The number of men who became chronically disabled was high. This was presumably because the men were evacuated to the rear and placed in an undemanding, relatively pleasant holding area for an undefined period of time, rather than being treated near the front and rapidly returned to combat duty. Realizing their mistake, the Nigerians are now attempting to minimize future incentive for maintaining disability by making one time cash payments rather than

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granting pensions to those with chronic psychiatric disabilities.

The Nigerian experience with combat psychiatric casualties is a vivid reminder of the value of immediate treatment of combat psychiatric casualties near the front and a rapid return to combat duty as a means of preventing chronic disability, and recalls the large body of work on the malignant effects of permissive environments, pensions, and other secondary gains in maintaining psychiatric disability.

Although at peace, the Nigerians are intensely interested in the field of combat psychiatry. They are planning to host the scientific meeting of the Section on Military Psychiatry of the World Psychiatric Association. The theme of the meeting will be war and its aftermath, and it is tentatively scheduled to be held in Lagos in November of 1979.

During our visit, Major Frank Sodetz and I were the guests of Colonel Dr. Olukayode Adelaja, Commander of the Military Hospital in Lagos, and consulting psychiatrist to the Nigerian Armed Forces. We met Dr. Adelaja's medical colleagues both in the military and in the School of Medicine of the University of Lagos, and we met a number of his friends in other walks of life.

The Nigerians were very hospitable. They are pleased that ties between our countries are growing stronger. There is considerable interest expressed for the expansion of exchanges of scientists, physicians and students. I am particularly interested in arranging for exchanges between Nigerian military medical scholarship students, studying in the civilian medical schools in Lagos and Ibadan, and our medical students at the Uniformed Services University of the Health

Sciences. Such an exchange would be valuable for both countries. Our students would gain experience in tropical medicine and they would gain personal knowledge of the problems of a developing nation. The Nigerian students would be exposed to the ultimate in technical medicine and they would gain personal knowledge of the United States.



Israel 19 - 28 June 1978

The Israeli Defense Force (IDF) suffered a relatively high rate of psychiatric casualties during the 1973 Arab-Israeli War. A significant proportion of these have remained disabled. In the 1973 war, psychiatric casualties were 9.8% of the total casualties. This is lower than our rate of 10-15% in the Second World War, and higher than our rates of 6% in Korea and 5% in Vietnam.

The 1973 war was short and intense. It lasted 3-4 weeks, caused heavy casualties, consumed vast quantities of military materiel, and, in its early phases, was fought twenty-four hours a day. Battles were mobile and fluid, with armor, infantry, artillery, and air support working in close coordination. The Israelis were taken by surprise, were nearly overrun by sheer numbers of men and masses of equipment, and initially, were forced to retreat. Even as they were retreating, the Israelis fought resourcefully and tenaciously with great tactical flexibility and personal initiative. Due in part to the unflexibility of the doctrine of their adversaries, the Israelis were able to mobilize their reserves and bring them up to reinforce the fronts. The Israelis gained tactical advantage and exploited it to regain their original positions. The 1973 Arab-Israeli War bears striking similarities to optimistic scenarios for a war between NATO and Warsaw Pact Forces in Western Europe. The Israeli experience with psychiatric casualties during the 1973 war is, therefore, of critical importance for us in knowing what to expect and in planning realistically for a possible war in Europe.

The Israelis were shocked by the suddenness, intensity, and near disaster of the war in 1973. They were deeply disturbed by their psychiatric casualties. Although their rate of such casualties was not excessive by our standards, in prior wars the Israelis had suffered almost no psychiatric casualties. In cooperation with Israeli academic institutions, the IDF, has subjected itself to intense scrutiny. It was hampered by a lack of systematic record keeping during the war, and thus much potentially valuable information was lost. Nevertheless, the results of this self scrutiny are informative, relevant, and timely.

I was able to learn of the IDF's experience with psychiatric casualties during the Second International Conference on Psychological Stress and Adjustment in Time of War and Peace held in Jerusalem from 19 to 24 June 1978, and later in private discussions with the IDF in Tel Aviv from 25 to 28 June 1978. The following summarizes what I have learned.

The Second International Conference on Psychological Stress  
and Adjustment in Time of War and Peace  
Jerusalem, Israel 19-24 June 1978

In Jerusalem, Major Frank Sodetz, Dr. David Marlowe, Dr. James Meyerhoff, Dr. Larry Ingraham, Dr. Richard Manning and I attended the Second International Conference on Psychological Stress and Adjustment in Time of War and Peace. I presented a paper on hallucinations during sustained operations based on data I collected during my participation in the British Army study of sustained operations, Exercise Early Call I.

There were several interesting and mutually complementary papers presented by the Israeli military and civilian behavioral scientists on human behavior and management of combat psychiatric casualties.

Lieutenant Dr. Reuven Gal, Chief Psychologist of the Israeli Defense Force (IDF), presented a paper on the characteristics of heroism. His paper analyzed the contribution of situational and personality variables to heroic behavior. He concluded that there was no distinct personality at risk for heroism, but that there were certain situations that almost inevitably called forth heroic behavior. Important aspects of these heroigenic situations were good leadership, strong unit cohesion, and intense combat stress.

Dr. Gal presented a retrospective study of 283 recipients of medals for valor during the 1973 Arab-Israeli War. Dr. Gal compared these men to a control group matched by unit and rank. Comparisons were made on a variety of measures of personality, performance and cognitive ability:

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1) Kaba score - a combination of intelligence, education, Hebrew, and motivation - obtained upon entry into the armed forces; 2) psycho-technic rating - a measure of general intelligence obtained upon entry into the armed forces; 3) course scores - from the equivalent of our advanced individual training; 4) personality factors - leadership, decisiveness, sociability, perseverance, and emotional stability rated by personal interview after the war; and 5) fitness. Each heroic act was studied for the presence or absence of the following situational variables: isolation, being in command, commander present, saving wounded, type of battle - offense or defense, original unit, staying alive, face to face battle, heroic act as the result of an explicit command, surrounded, few against many, and saving the lives of others.

Analysis of the personal characteristics revealed age as the only characteristic distinguishing the heroes from the non-heroes. Heroes were significantly younger. Associated findings were that the heroes were less often married, and, if married, were less likely to have had children. The heroes also showed a trend toward higher Kaba scores, higher course scores, and a higher overall rating on personality factors. There were no trends toward differences in level of education or fitness.

The situational factors involved in heroic acts were analyzed by means of minimal space analysis. Four clusters of situational variables emerged as generating heroic acts:

In the first cluster, the men were surrounded, outnumbered, defending, and retreating. The men were acting together when the heroic act was performed, and the commander was the hero, or the commander was

present. The men were usually isolated, surrounded, and the heroic act occurred while breaking out of the encirclement.

In the second cluster, the men were in a face to face battle, and the hero was saving the lives of the wounded. The commander was absent and the hero was psychologically isolated. The hero remained alive while saving others. Dr. Gal characterized this situation as the "last remnant and savior".

In the third cluster, the situation was one of a few against many. It was the hero's regular unit, and the hero died saving the lives of his friends. Dr. Gal characterized this as clear "self-sacrifice".

The fourth and final cluster found the hero alone, fighting in an offensive battle to the last bullet. He was not under clear orders. He was not fighting to save himself or others. He "fought to the death".

Dr. Gal found ten to twenty cases fitting clearly into each cluster. The clusters account for something less than one-third of the cases of heroism. The remaining cases were sufficiently unique that common situational factors did not emerge.

In discussing his results, Dr. Gal noted that the heroes were not clearly distinguishable from their colleagues. And although they represented a high cross section of soldiers, they fell generally into the upper quartile of overall scores and test results. He characterized the heroes as officers and non-commissioned officers (NCOs) who had good, but not perfect military records. In particular, most of them had shown some resistance to military authority in the form of being

absent without leave, or being disciplined for breaches of military regulations at some point in their careers. Dr. Gal concluded that there was no specific medal recipient personality, that is, in his words, "we are all at risk for heroism". He stressed the importance of situational factors in the generation of heroic acts.

In the discussion with members of the audience which followed Dr. Gal's presentation, a British psychiatrist commented on the belief, arising from his experience with the Royal Air Force (RAF) in World War II, that heroes were sociopathic. I doubted this, and volunteered the currently accepted research criteria for sociopathy. Dr. Gal concurred and responded that none of the men studied fit these research criteria.

Another gentleman in the audience wondered why so many of the medal recipients were officers or NCOs. Dr. Gal replied that in the Israeli Army the officers and NCOs exposed themselves to the greatest risks, and in support of this, he cited the casualty statistics from the 1973 war: On a percentage basis many more officers and NCOs were wounded or killed than enlisted men.

The results of Gal's study show that heroes are not unique or unusual people. This study suggests that there are certain characteristic situations which call forth heroism. In all these situations, the heroes were involved in intense combat. In the first three of the four situational clusters, and perhaps also in the fourth, additional key situational ingredients were good leadership and strong unit cohesion. The most heroic soldiers were not the most obedient, and some resistance to military authority appeared to foster heroic behavior. From the discussion, it appeared that an important factor in heroism not

specifically investigated in this study was the willingness of officers and NCOs to die leading their men. Dr. Gal's study underscores the importance of strong unit cohesion and good unit leadership in calling forth the best efforts from soldiers in combat.

Dr. Shabtai Noy of Hebrew University presented two papers on the characteristics and management of combat psychiatric casualties.

In his first paper, Dr. Noy reviewed the literature on combat psychiatry, and proposed an integrative model for the treatment of combat reactions. He drew a distinction between combat reaction and battle fatigue. A combat reaction develops after a few hours or a few days of intense combat. In contrast, battle fatigue develops after weeks or months of more moderate combat. In the short and intense 1973 Arab-Israeli War, psychiatric casualties took the form of combat reactions. Dr. Noy accepted the view that combat reactions progress through three distinct stages. The first or immediate stage lasts hours to days and is characterized by free floating anxiety. The majority of persons with combat reactions recover during the immediate stage. Those who do not, pass into the second or acute stage which is characterized by the emergence of neurotic symptoms compatible with the premorbid personality. This stage lasts from days to weeks, and recovery is still likely. If treatment in the acute stage fails, the person passes into the final or chronic stage which is characterized by personality impoverishment. This stage is of extended duration and recovery is unlikely.

In reviewing the literature on combat psychiatric casualties, Dr. Noy found two distinct forms of treatment described. One of these

grew out of clinical work in the First World War. This form calls for rest and encouragement at or near the front and a rapid return to combat duty. The second form of treatment, was based on analytic theory, and grew out of work with civilian patients suffering from traumatic neuroses. This second form calls for the release of tension resulting from the trauma of combat and suppressed emotions associated with this trauma through conscious examination and acting out in imagination, words, or action, of the trauma itself. In analytic terms this treatment is called abreaction. The rest and encouragement method has been used primarily near the front by military medical units. The method of abreaction has been used primarily in the rear, in civilian hospitals. According to Dr. Noy, until the present, no attempt has been made to integrate these two techniques of treatment and to provide differential indications for their use. He suggested that the use of rest and support near the front, and abreaction in the rear, reflected accurate intuitive judgments by the clinicians involved as to appropriate therapy for what, in Dr. Noy's view, were different stages of combat reaction. Accordingly, he suggested that rest and support with rapid return to combat duty was the treatment of choice for the immediate stage of combat reaction, but that if this treatment failed, and the person passed into the acute stage, that then, evacuation to the rear and abreaction became the treatment of choice.

In his second paper, Dr. Noy reported on his retrospective study of 40 Israeli soldiers who suffered combat reactions during the 1973 Arab-Israeli War. All his subjects were treated during the acute stage.



Of the 40 men studied, Dr. Noy found the following overall outcome: 44.8% had recovered with no difficulties and optimal functioning, 31% had some difficulties and good functioning, 20.7% had much difficulties and limited functioning, and 3.4% had severe difficulties and no functioning.

Thirty-five percent of the men with combat reactions had been seriously wounded. In 70% of this wounded group, the physical injury appeared to be a direct cause of the combat reaction. Forty percent of the men with combat reactions had interpersonal difficulties in their units as opposed to 10% in a control group of men not suffering combat reactions. Prior or ongoing civil stresses were found in 80% of the cases of combat reaction. Fifty percent of the psychiatric casualties had wives who were pregnant or who had given birth within the year preceeding the war. In twenty-three percent of the cases, there had been a recent death in the immediate family. In most cases these civil stresses appeared to have played direct roles in causing combat reactions. Neither the presence nor the severity of both combat or civilian stresses appeared to bear any relationship to prognosis for recovery. In summary then, the severity of both combat stresses and prior or ongoing civilian stresses played a significant role in the generation of combat reactions, but seemed to have no effect on prognosis.

Dr. Noy did find a significant correlation between premorbid personality and prognosis. For the purposes of his study, Dr. Noy classified each of his subjects as either a stable, a transitional or a repressed personality. Reasonably well adjusted men in stable life circumstances were classified as stable personalities. Men who

were facing developmental crises, generally in their late teens or late 30's and early 40's, were classified as transitional personalities. Men who dealt with anger or anxiety with massive repression, typically denying having felt angry at anytime in their adult lives, self reports confirmed through interviews with their families, were classified as repressed personalities. These men tended, in civilian life, to live in communities containing large numbers of transient persons, communities in which there was significant personal and group maladjustment. The transitional personalities also had a relatively poor prognosis, though not as poor as the repressed personalities. The stable personalities had the best prognosis, and usually recovered from the acute stage. As a general observation, Dr. Noy found that the intensity of combat reaction in the immediate stage was greater in the poorer prognosis groups, and that the intensity of combat reaction appeared to correlate with the degree of repression in the patients premorbid personality.

Dr. Noy's study reveals the importance of prior or ongoing civil stresses as well as of combat stresses in generating combat reactions. Thus, persons who have stressful home situations, for whatever reason, ranging from recent births to recent deaths, are more vulnerable to combat reactions. All personality types, in Dr. Noys study, appeared equally vulnerable to combat reactions. No specific personality stood out as either more resistant or more vulnerable to combat reaction. Personalities in transition or repressed personalities had a poorer prognosis for recovery. The repressed personalities, the group that had the poorest prognosis, came from unstable communities, with high numbers of transients. Dr. Noy's findings that intensity of combat stress

increases the likelihood of a combat reaction is not surprising. Not so immediately obvious, and of great interest, is his finding that stable family and community life provide a measure of protection against combat reaction and are indicators of a more favorable prognosis once a combat reaction has occurred.

The fourth interesting paper was presented by Dr. Meir Steiner and Dr. Micha Neumann of Tel Aviv University. Their study was a retrospective comparison of social supports, both military and civilian, between soldiers who suffered combat reactions and those who had emerged from intense combat psychiatrically unscathed. In contrast to the unscathed group, the men who suffered combat reactions reported little or no identification with their unit or team, no trust in their leadership, frequent transfers and rotations, feelings of loneliness and of not belonging to their unit, and finally, low self esteem regarding their military performance. The authors felt that all the above factors contributed to the development of combat reactions. In contrast, in their view, positive social support, group identification, stability in assignment, and high regard for one's work appeared to protect against combat reactions even in intense combat.

In the paper that I presented, I described the design, execution, and overall results of the British study of sustained operations, Exercise Early Call I, and then described the data that I had collected on hallucinations during the exercise. This exercise demonstrated that the soldiers who slept three hours a night could remain militarily effective for nine days or more. Soldiers who slept one and one half hours a night, remained militarily effective for five days. Soldiers who did not sleep at all became militarily ineffective after 3 days.

Ten percent of the subjects reported vivid visual hallucinations. Because of my sampling technique, I felt this to be an underestimate, a supposition which was confirmed in Early Call II in which 100% of the subjects reported vivid visual hallucinations after 72-96 hours without sleep. The hallucinations during Early Call I and II occurred only at night, and only when the men were alone or otherwise socially isolated. The hallucinations disrupted behavior and performance. My findings suggest that the incidence of hallucinations could be reduced by minimizing social isolation and sensory deprivation. My findings further suggest that if hallucinations were reduced, performance during sustained operations would be improved.

In summary, the papers by Drs. Gal, Noy, Steiner and Neumann are important contributions to military psychiatry. They suggest that small unit leadership and cohesion are of great importance in maximizing military performance and minimizing psychiatric casualties. They point to the importance of both civilian and military social supports in preventing psychiatric casualties. My paper, which focused on behavior over minutes to hours, rather than days to weeks, suggests that social support and sensory stimulation protects on a minute by minute basis against aberrant experience and aberrant behavior in men who are tired and stressed. Further, Dr. Noy's papers suggest that when prevention fails and psychiatric casualties occur, immediate treatment near the front with a rapid return to duty is the initial treatment of choice; if this is unsuccessful, then evacuation to the rear and abreactive treatment is useful.

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Discussions with the Israeli Defense Force (IDF)

Tel Aviv, Israel 25-28 June 1978

In Tel Aviv, Major Frank Sodetz, Dr. David Marlowe, Major Larry Ingraham and I met with Dr. Ely Baruch, chief psychiatrist of the IDF, Lieutenant Colonel Dr. Sidney Cohen, Dr. Baruch's second-in-command, Lieutenant Colonel Dr. Reuven Gal, chief psychologist of the IDF, and Dr. Shabtai Noy, a psychologist at Hebrew University and formerly of the IDF.

Our discussions covered problems in military psychiatry during both war and peace, and in particular focused on the Israelis' difficulties in training lower quality recruits, the Israeli experience with sustained combat operations, the Israeli experience with psychiatric casualties during the 1973 Arab-Israeli War, the emerging Israeli doctrine for managing psychiatric casualties in a future war, Israeli methods of training psychiatrists and psychologists to manage combat psychiatric casualties, and possible areas of American-Israeli collaboration in the area of combat psychiatry.

The discussions drew heavily on the retrospective studies of Drs. Gal and Noy already discussed, on other studies by Dr. Gal, and on the personal experiences of Drs. Baruch and Cohen. The emerging doctrine of combat psychiatric casualty management was a compromise between differing views, and clearly provisional in areas where objective data were inadequate.

Dr. Gal and his group of psychologists were concerned with selection and training of recruits, the characteristics of excellent military

performance, and the integration of psychological services at the small unit level. Drs. Baruch and Cohen were concerned with the placement of psychiatric personnel at the brigade level, personnel who would triage psychiatric casualties and send those needing treatment to an initial treatment and holding area at the divisional level. They were concerned with organizing treatment at the divisional level, and with providing psychiatric care further to the rear, should treatment at the divisional level fail.

Thus, organizationally, psychiatrists and psychologists have different areas of responsibility, and this organizational design produces complementary interests, areas of expertise, and doctrine.

The Israeli Army has traditionally taken only high caliber recruits into their officer corps, and these men have generally had prior service in the enlisted ranks. The standards for officers have remained rigorously high. Recently, however, the Israeli Army has had to take recruits for the enlisted ranks of a lower caliber than before. Dr. Gal spoke of the difficulties in inducting and training these lower quality recruits. All recruits in the Israeli Army are literate. However, the lower quality recruits may have lower IQs, specific learning difficulties such as poor reading comprehension, deficient educational backgrounds, they may come from less sophisticated cultural milieu, or have behavior and character disorders. Dr. Gal emphasized that a good army depends upon training not upon selection, and that therefore lower quality recruits do not mean a lower quality army. Those lower quality inductees for the enlisted ranks are handled differently than average enlisted recruits. In basic training, the lower quality recruits are taught by

a larger training team, subjected to a more gradual application of military discipline and stress, given remedial courses in reading comprehension, and given more recreational, educational, and cultural experiences. Thus, an effort is made to improve their skills, and to induct them into the mainstream of Israeli society as well as into the requirements and disciplines of the Army. Once through basic training, these men are dispersed throughout the Army, and assigned to special units which have been well primed to accept them. They are generally maintenance units, located not too far from the soldier's home. These units are provided with an extra complement of social and psychological services.

Dr. Gal commented that armies have traditionally drawn on the less desirable elements in a society for the enlisted ranks, and that historically, armies have played a valuable role in enculturating such persons and in helping them to be socially more productive.

Dr. Gal went on to discuss another problem, in part related to the lower quality inductees in the enlisted ranks. There have been recent frequent mini-epidemics of suicide attempts and self-inflicted wounds. These are generally not serious suicidal attempts. They occur in younger soldiers of lower than average IQ, and are usually indicative of low morale within the particular unit. These epidemics are best dealt with on an immediate basis by disciplinary action. This arrests the spread of the epidemic. On a longer term basis further epidemics can be prevented by discovering the causes of the poor morale. These causes are usually of an easily correctable nature such as a lack of some physical amenity or a lack of availability of an expected small privilege. Dr. Gal cautioned that suicide attempts in older men with higher IQs were

more serious. Such attempts were usually associated with alcoholism, family problems, or economic troubles and were best treated by more conventional psycho-therapeutic means.

Dr. Gal's remarks turned toward the Israeli experience with sustained combat operations. He was interested in the British study of sustained operations, Exercise Early Call I, and particularly in the findings of this study that infantrymen sleeping 3 or more hours a night can fight effectively for a relatively indefinite period of time.

In Dr. Gal's experience, even under the most severe battle conditions, soldiers sleep for at least 3-4 hours in every 24. Dr. Gal was less concerned with the duration of the period of sustained combat than with its intensity. In his view, which agreed with the findings of Dr. Noy's study discussed earlier, it is the intensity of combat which produces combat reactions, and that if the combat is of extreme intensity combat psychiatric casualties may be expected within the first few hours and days before the onset of significant fatigue or of sleep deprivation. Dr. Gal said that therefore it was of critical importance for commanders to be alert for signs of incipient breakdown in their men, at all stages of a battle. The signs are: apathy, depression or inactivity, and an increasing rate of casualties.

In addition to the intensity of combat, Dr. Gal cited the soldier's combat role as an important factor in predisposing him to psychiatric breakdown. In the 1973 War, psychiatric casualties were heaviest in armored units, intermediate in artillery units, and lightest in infantry units. Dr. Gal's explanation was as follows: The men in armored units suffered from the combined effects of relative personal passivity,



little group solidarity (outside of their own tank), and claustrophobia. Artillery units suffered from relative passivity but had good group solidarity and they were in the open. Infantrymen had all three - personal activity, good group solidarity, and they were in the open.

Thus, in Dr. Gal's view intensity of combat but not duration, and the soldier's combat role, were key factors in predisposing him to combat psychiatric casualties.

Dr. Baruch and Dr. Cohen discussed the Israeli experience with combat psychiatric casualties during the 1973 War, the changes in their view of combat psychiatry as a result of this experience, and their plans for management of combat psychiatric casualties in a possible future war.

In the 1973 War, the Israelis saw combat reactions and not battle fatigue. Dr. Baruch summarized the differences between the two syndromes in the following manner: Battle fatigue occurs after 80-95 days of combat. Forty-eight hours of rest, facilitated by modest doses of chlorpromazine, is adequate treatment. Combat reactions, on the other hand, occur after five to twenty days of combat, and sometimes even earlier. Elite units had the lowest incidence of combat reactions. Both Dr. Baruch and Dr. Noy felt that combat reactions were best treated without drugs. Dr. Baruch felt that abreaction was an effective immediate treatment; Dr. Noy felt that abreactive treatment should be used only if initial rest and support fail. They both felt that 48-72 hours might not be sufficient time for the men to recover.

According to Dr. Baruch, the Israelis saw a new form of combat psychiatric casualty which they called the delayed combat reaction.

Some soldiers would do well during the period of intense combat, only to breakdown dramatically upon receiving their first telephone call from home or when they were on their first leave. Most of the delayed combat reactions occurred at home, so most psychiatric referrals for delayed combat reactions came from the rear. Dr. Baruch explained delayed combat reactions in the following manner: The returning soldiers were full of traumatic experiences. There was no one at home with whom they could share them. They were faced suddenly with the tremendous contrast between combat and civilian life. Finally, they were faced with the accumulated demands of family, friends, and work.

Delayed combat reactions emerged in another form and were the subject of an interesting story told by Dr. Baruch, who recalled that during the 1973 War, psychiatric casualties on the Suez front were evacuated to hospitals in the middle of the Sinai. The hospitals while not physically near the front were in psychological proximity to it. There, the soldiers who suffered combat reactions, would rest for 2-3 days and be largely recovered and ready to return to duty. However, because doctrine specifically forbade such a return, the men once improved, were evacuated further to the rear, either to Tel Aviv or to Jerusalem. The soldiers would frequently undergo a second and more serious decompensation during the latter evacuation. These observations further emphasize the importance of prompt treatment near the front and a rapid return to duty.

Battle fatigue is a syndrome arising from extended combat duration, and it did not emerge in the short intense war of 1973. Combat reaction is a syndrome arising from intense combat and other underlying turmoil and it emerged quite early in the war. The traditional formulae of

prevention and treatment of psychiatric casualties were developed for the treatment of battle fatigue. The Israelis believe that they apply, in general terms, to combat reactions as well. However, they feel that combat reactions should not be treated with drugs, and that 48-72 hours may not be sufficient time for recovery.

Once a soldier had suffered a combat reaction, a major factor prolonging his disability was hospitalization in a civilian hospital. Soldiers who were on the verge of coping were undermined by too much acceptance, pity, and empathy on the part of the civilian hospital staff. In civilian hospitals, therefore, there was a high incidence of delayed combat reactions.

In general those soldiers at high risk for both immediate and delayed combat reactions were those who were from reserve units, who were newly married, who had a mortgage, a pregnant wife, sick parents, or any serious personal loss.

Dr. Baruch summarized the knowledge gained from the 1973 War in the treatment and prevention of combat psychiatric casualties:

- 1) Hold and treat at the lowest level possible.
- 2) Evacuate combat psychiatric casualties by ambulance, not by helicopter, to ensure local evaluation and to ensure psychological proximity to the front.
- 3) Organize in advance for the holding, treatment, and return to duty of psychiatric casualties. Fully inform the unit commanders of expected casualties, treatment, and plans for their return.
- 4) Minimize psychiatric casualties by ensuring good unit morale, specifically through good group cohesion, strong leadership, and

assurance that loved ones were being looked after at home.

5) If immediate treatment is unsuccessful and further evacuation is required, minimize this stress by evacuating to military convalescent camps, where military discipline is maintained, rather than to more permissive civilian hospitals.

6) Plan for accurate and relevant record keeping during wartime, so that valuable information can be gathered and evaluated.

From these principles a plan is emerging for the treatment of psychiatric casualties in the event of a future war. The plan calls for the assignment of a psychiatric team to each field surgical unit. The field surgical units will be deployed at the divisional level. Some members of the psychiatric team will remain with the surgical field unit, and others will be deployed forward to support individual brigades. The team member deployed forward will assist in the triage of soldiers for evacuation. Non-professional members of the psychiatric team will be assigned the task of escorting men to and from the front, and the task of keeping records.

The first line of treatment will be at the divisional level with the surgical field unit. The Israelis hope to have the capacity to hold men at the divisional level for 24-72 hours.

The second line of treatment will be a series of rehabilitation camps. These will be behind the lines, but away from civilian centers. They will be organized as military units. The men will wear uniforms and conform to military discipline. Activities will include military drill, abreactive therapy, sports, and maintenance activities. Maximum stay will be two weeks. It is hoped that these camps will maintain

psychological proximity to the front, avoid the demoralizing effects of a civilian hospital, and provide effective therapy in the form of abreaction.

Dr. Baruch and Dr. Cohen are concerned that the longer term required for the treatment of combat reactions may further complicate the already considerable problem of returning a man to his unit under the fluid and fast moving conditions of contemporary armored warfare.

Dr. Cohen spoke of the need to systematize past knowledge and past experience, to clarify the important and unanswered questions lurking beneath the formulae of the past, to be aware that the nature of psychiatric casualties may be changing (i.e., more cases of combat reaction, and fewer cases of battle fatigue) as wars become shorter and more intense. He spoke of the need to develop a provisional doctrine based on the best synthesis of past experience, and to develop the means of data collection and record keeping that would ensure that the tenets of the provisional doctrine could be put to the test and modified as more experience is gained. From all this, the doctrine can be refined, and the means of applying it improved.

Dr. Cohen was also concerned with training psychiatrists and psychologists, particularly those in the reserves, to treat combat psychiatric casualties effectively, and to work within the provisional doctrine, realizing both its strengths and its potential limitations. He related that for training purposes, he and his colleagues were using actors to reenact case histories from the 1973 War.

Dr. Cohen appealed for the development of a doctrine suitable to the exigencies of contemporary armored warfare, a doctrine which would

take into account its intense, mobile, and fluid nature. He felt that the nature of combat psychiatric casualties was changing, that treatment near the front and a return to combat duty was becoming more difficult, and that therefore, prevention and the integration of psychiatric services at the small unit level were becoming more important.

Drs. Baruch, Cohen and Noy were eager for collaboration with us to synthesize past experience, develop a new doctrine, and plan training. They were quite willing to share with us their case histories from the 1973 War. They hoped that since we face common problems in combat psychiatry, our resources coupled with their recent experiences, would lead to fruitful collaboration in the areas of prevention and treatment of combat psychiatric casualties.

In 1973, the Israelis fought a war which anticipates the nature of a possible war in Europe between NATO and the Warsaw Pact. The Israelis were struck by the intensity of that combat. Psychiatric casualties emerged rapidly in the first few hours and days in the form of combat reactions. Treatment near the front with rest, support and perhaps abreaction is the treatment of choice. The difficulties in treating a psychiatric casualty at or near the front in a contemporary armored battle are great, as are the problems of returning a man to his unit once he has recovered. The Israelis feel the treatment in physical proximity to the front for psychiatric casualties is so important that they are considering two modes of evacuation, helicopters for medical and surgical cases, and field ambulances for psychiatric cases. Yet the problems with this scheme are great enough that the Israelis plan to put increasing reliance on the integration of psychiatric services into small

units, and a greater emphasis on prevention with the thought of making every unit an elite unit. There is no doubt that collaboration between the Israelis and the Americans in the development of a doctrine for the diagnosis, the treatment, and the prevention of combat psychiatric casualties would be of great value.

Heidelberg, Federal Republic of Germany 8 - 12 July 1978

In Heidelberg, I presented a summary of the discussions in Nigeria, of the conference in Jerusalem, and of the discussions with the Israeli Defense Force (IDF) to the psychiatry consultants of the United States Army Medical Command - Europe (USAMEDCOM-EUR), Lieutenant Colonel Dr. John Fallensby, and Lieutenant Colonel Dr. Richard McCloud. They were keenly interested in my summary, and were alarmed by its implications for the occurrence and prognosis of combat psychiatric casualties in the United States Army in the event of a war in Europe. They felt that the factors identified by the Israelis as promoting psychiatric breakdown - ongoing civil stress, poor group cohesion and low morale, and intense, nearly continuous, combat - would all be present in the United States Army in Europe during such a war. Also, in their opinion, immediate treatment of combat psychiatric casualties near the front with a rapid return to combat duty, the importance of which has been reinforced by the recent experiences of the Israelis and Nigerians, would be difficult to effect, and especially so, since current plans call for evacuation of all casualties to the rear by helicopter. Thus, if the general experience of modern warfare, and more specifically, the recent experiences of the Israelis and the Nigerians are any guide, then, under prevailing conditions, we could expect large numbers of combat psychiatric casualties, and that of these casualties, a high proportion would become chronically disabled.

An additional concern of Drs. Fallensby and McCloud was the general lack of training in the diagnosis, and the management of combat psychiatric



casualties both in Army Medical Center psychiatric residency programs and in field units. They were interested in the possibility of obtaining Israeli psychiatric care histories from the 1973 war and using these, as the Israelis have, as the bases for both formal lectures, and field training exercises. An additional possibility mentioned was to videotape one of the Israeli training exercises and use those videotapes for the purpose of introductory training of mental health personnel in the diagnosis and treatment of combat psychiatric casualties. A collaboration between the United States Army and the IDF in the area of developing training and doctrine would be fruitful.

London, England 13 - 19 July 1978

In London Major Larry Ingraham and I met with two psychiatrists in the Royal Army Medical Corps, Brigadier General Dr. Stewart, the chief psychiatrist consultant and Lieutenant Colonel Dr. Peter Abraham, the head of the Department of Psychiatry in the Royal Army Medical College. I outlined for them what I had learned in Israel, Nigeria and the Federal Republic of Germany. They were interested in the experiences of the Israelis and the Nigerians with combat psychiatric casualties. They agreed with my colleagues in the United States Medical Command - Europe, that given the probable intensity and fluidity of any major war in Europe, the established principles of combat psychiatry, immediate treatment near the front, and rapid return to combat duty, would be difficult to apply. They felt that morale, leadership, and small unit cohesion in the Royal Army were good, and expected this to provide some protection against psychiatric breakdown under intense combat stress.

Following the discussions in London, Major Ingraham and I visited Dr. Diana Haslam and her associates at the Army Personnel Research Establishment (APRE) in Farnborough. Dr. Haslam and her associates at APRE have conducted two valuable field studies of sustained combat operations. The first study, Exercise Early Call I, was conducted in June 1976. I participated in this study and collected data on visual hallucinations (see my discussion in the section on Israel). The second study, Exercise Early Call II, was conducted in November and December of 1977, and extended the findings of Early Call I, both with regard to the

minimum sleep necessary to sustain military performance during sustained operations, and with regard to the importance of social support and sensory stimulation in maintaining normal behavior in men who are tired and stressed.

In Early Call II, ten experienced infantry soldiers took part in a nine day tactical defensive exercise. The men were not allowed to sleep during the initial 90 hours of the experimental exercise; then were allowed four hours of sleep a night for the remainder of the exercise. This sequence of 90 hours of continuous activity followed by six days with only limited sleep, is one which we could realistically expect in the event of a European war.

The results are of great interest. Vigilance and cognitive performance began to deteriorate after one night with no sleep. After 68 hours of no sleep, the men ceased to constitute an effective fighting force, primarily because of inappropriate and irrational behavior, rather than because of loss of physical efficiency. After three days without sleep, all subjects experienced vivid and complex visual hallucinations. These hallucinations occurred only at night and only when the men were alone. The hallucinations were frequently the sources of errors in action. The conditions of their occurrences indicate that these hallucinations were the result of a combination of sleep deprivation, sensory deprivation, and social isolation. I found similar hallucinatory experiences in Early Call I. After the first four hour block of sleep, the men showed significant recovery in performance, hallucinations ceased to occur, and the men again became an effective fighting unit. On subsequent days, with four hours sleep nightly, the performance of the

men continued to improve. Mood, which initially showed no improvement after the re-institution of limited sleep, subsequently, improved as well. Thirty hours of rest, with approximately 1/2 to 2/3 spent in sleep, following the nine day experimental period, was sufficient to restore performance and mood to the initial control levels.

Thus, even limited amounts of sleep, following a period of continuous operations, are of value in restoring performance and mood. As in Early Call I, the results of Early Call II suggest that minimizing sensory deprivation and social isolation will improve performance during sustained operations.

### Conclusions

Combat psychiatric casualties will continue to be a major problem in time of war. This will be true whether the war is a relatively technically unsophisticated, protracted, and moderate one in the developing world, or a technically sophisticated, brief, and intense one between the forces of NATO and those of the Warsaw Pact. In moderate, protracted wars, combat psychiatric casualties will take the form of battle fatigue emerging after weeks or months of fighting. In an intense, brief war, combat psychiatric casualties will take the form of combat reactions emerging after hours to days of fighting. Thus, the anticipated brevity of a major war in Europe provides absolutely no protection against the occurrence of combat psychiatric casualties, as combat reactions are a function of intensity not of duration of combat. For both battle fatigue and combat reactions, the initial treatment of choice is immediate attention near the front, followed by a rapid return to combat duty.

Psychiatric casualties should be evacuated to the rear only if immediate treatment near the front is unsuccessful. Immediate evacuation of all psychiatric casualties to the rear worsens the chances for recovery, and increases the likelihood of long term disability.

The treatment of combat reactions in contemporary intense, brief, armored war poses special problems. While immediate attention near the front is the treatment of choice, it is not clear what form of treatment, beyond rest and support, is optimum. The Israelis do not favor the use of major tranquilizers, such as chlorpromazine, and disagree among

themselves as to the usefulness of abreaction. In addition, under the intense and fluid conditions of such a battle, it will be difficult to find a stable area near the front in which to institute immediate treatment. For this reason, the Israelis have come to stress the importance of psychological proximity to the front as opposed to physical proximity. Finally, even if men can be successfully treated near the front, the task of returning them to their units in a fluid and mobile battlefield will be a difficult one.

These considerations suggest the importance of prevention and of in situ treatment in the overall planning for the management of combat psychiatric casualties.

From the work of the Israelis, it is clear that a stable family life, good small unit leadership, and strong small unit cohesion protect against psychiatric breakdown in the face of intense combat stress. In contrast, frequent moves, frequent changes in assignment, and living in transient communities not only predispose to the occurrence of combat reactions, but leads to a poorer prognosis for recovery once a combat reaction has occurred.

The treatment of combat psychiatric casualties in situ, that is within the soldier's unit as it is engaged in combat, is an interesting idea which deserves consideration. Dr. Gal emphasized the need for commanders to recognize the signs of incipient breakdown in their men, and to take steps to prevent overt breakdown from occurring. Further, my study of hallucinations during Exercise Early Call I, and the results of Exercise Early Call II, indicate that disruptive behavioral

aberrations, in the form of hallucinations, may be preventable by maintaining moment-to-moment social and sensory stimulation. Such manipulations may be of real practical value in reducing the incidence of combat psychiatric casualties.

From my discussions with both the Israelis and our consulting psychiatrists with the United States Army in the Federal Republic of Germany, it seems clear that the United States Army can expect a high rate of psychiatric casualties in the event of a war with the Warsaw Pact. In our Army, small unit leadership is poor, and small unit cohesion is weak. Because of the Army's policy of frequent changes of station, most military personnel and their families live in transient communities and are subject to chronically high levels of domestic turmoil and civil stress. Thus, factors determined by the Israelis to predispose to psychiatric breakdown in combat, and to be associated with poor prognosis for recovery, once psychiatric breakdown has occurred, are present in abundance.

Not only will combat psychiatric casualty rates be high, but because of our policy of evacuating all casualties to the rear by helicopter, and our lack of any provision for treating and returning combat psychiatric casualties to combat duty, we can expect a high percentage of our psychiatric casualties to remain permanently disabled.

Our doctrine for the treatment of combat psychiatric casualties, while accurate as far as it goes, is, in the face of the Israeli experience, and the current conditions of morale and readiness in our Army, simplistic and inadequate.

Compounding our difficulties, is the lack of any but the most token training for our mental health personnel, including our psychiatrists and psychologists, in the prevention and treatment of combat psychiatric casualties.



### Recommendations

We must work to prevent combat psychiatric casualties by improving the morale in our Army. To do this, we must support and stabilize military families, strengthen small unit cohesion, and improve the quality of small unit leadership. A critical ingredient in such preventive work is to end the Army's policy of frequent changes of station and thus to diminish the transitional nature of Army communities. In Europe we must have a sound and effective plan for the evacuation of dependents in the event of an impending war. These improvements will, to a degree, protect our soldiers against psychiatric breakdown under intense combat stress, and promote good military performance and even heroism.

We must organize effective in situ treatment of incipient psychiatric breakdown by alerting commanders to the signs of incipient collapse, and by minimizing sensory deprivation and social isolation. These steps, and perhaps others of similar but as yet undefined nature, will augment the effects of improved morale and greater family stability in improving military performance and minimizing combat psychiatric casualties.

We must organize effective treatment of overt combat psychiatric casualties to minimize both short and long term disability. To do this we must solve the twin problems of treating a man near the front, and returning him to combat duty, under the fluid and intense conditions of contemporary armored warfare.

We must train our mental health personnel to understand and carry out effectively the doctrine that we develop. We must arrange for

adequate record keeping so that doctrine can be evaluated and refined on the basis of solid data rather than on the basis of impressions, and anecdotal accounts.

We must pursue collaborations with interested military psychiatrists in other countries for the purposes of exchanging ideas and information, refining doctrine, and planning training.

All these steps will benefit the soldier in combat, his family, and the Army as a whole.

**EVACUATION SYNDROMES IN MILITARY EXERCISES:  
A MODEL OF THE PSYCHIATRIC CASUALTIES OF COMBAT**

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An evacuation syndrome develops in combat when through accident or ignorance an evacuation route to the rear through medical channels opens for soldiers displaying a particular constellation of symptoms and signs. Two examples, one from the First World War, and the other from the Vietnam War illustrate this syndrome. In the First World War, in a battle where lethal gases were used, an incident occurred in which soldiers came to their medical aid station saying that they had been gassed and complaining of cardiorespiratory symptoms (1). These men came from a unit which had had heavy casualties, had been expecting to be relieved, and had not been. Morale, in the unit, which had been declining, plummeted. The medical personnel evaluating these men with the cardiorespiratory symptoms evacuated them to the rear. A few more men came in with similar complaints and were also evacuated. This trickle soon became a flood, and a source of serious manpower loss to the unit. The remedy, which was instituted once the magnitude of the ongoing personnel loss was evident, was to send all the men suspected of being gassed to their battalion headquarters, where they were given a hot drink, a rest, and then, if they seemed fit, returned to their unit. In the example from Vietnam (2), increasing numbers of soldiers came to medical attention with the complaint of sleepwalking because this led to billeting near the center of the camp away from the periphery. These complaints disappeared when sleepwalking soldiers were required to do night sentry duty on the perimeter until their symptoms resolved (2). Evacuation syndromes represent a special case of the psychiatric combat casualty, and thus these syndromes illustrate all the features of both the causation and the treatment of such casualties.

The occurrence of an evacuation syndrome is not restricted to actual combat. Typical evacuation syndromes occur in military exercises as well, and thus serve to illustrate all the characteristic features of these syndromes. Hence, the identification of such syndromes is useful for training purposes. An excellent example of an evacuation syndrome occurring during an exercise comes from Early Call I, the British Army study of simulated sustained combat operations conducted in the spring of 1976.

Exercise Early Call I (3,4), conducted by the Army Personnel Research Establishment (APRE) of the British Ministry of Defence,

involved three platoons from The Parachute Regiment in 9 days of simulated continuous combat meant to approximate the conditions of a war in Europe. The exercise was conducted in the field at the Otterburn training area in Northern England. The plan of the exercise called for the three platoons to make a nine day retreat, a controlled retrograde movement, in which they sequentially marched to and defended three different positions, holding each position for three days. As specified by the design of the study, each of the three platoons was assigned to a different sleep regimen. One platoon was allowed three hours sleep each night, one platoon was allowed an hour and half sleep a night, and one platoon was not allowed to sleep. The results with respect to the sleep regimens are described elsewhere (3,4).

The evacuation syndrome in Early Call I occurred in the platoon sleeping one and one half hours a night. Since it occurred in a field study, and not during actual combat, it was possible to observe it in its entirety, and therefore it can be seen to illustrate with particular clarity the role of morale, leadership, and self care in the genesis of evacuation syndromes, the role of naive medical personnel in opening a route of evacuation to the rear, and the effectiveness of command intervention in eliminating the syndrome. The evacuation syndrome in Exercise Early Call I developed on the fourth day of the exercise and before it was checked the platoon sleeping one and one half hours a night had lost half of its strength. The platoon commander of this platoon was an NCO who had extensive combat experience in Malaysia and Northern Ireland. He was generally effective throughout the exercise in maintaining the morale of his platoon. He was calm, relaxed, and encouraging with his men, a technique which worked well especially as the men became increasingly fatigued. He was careful to ensure that his men followed the routines of self care necessary in cold wet weather. He made sure that they changed their socks regularly, stayed as dry as possible while working, slept dry, and had dry clothing to put on in the morning. On the evening of the third day the platoon had marched to and dug in at the second of the three positions to be taken and held during the exercise. The tactical plan developed by the battalion headquarters called for the platoon to be divided into two sections 400 meters apart. The platoon commander remained with one half of the platoon, in the other half, command was given to a relatively inexperienced corporal. Both sections of the platoon were tired. It was raining heavily. Due to the rain, the platoon commander did not visit the other half of the platoon that night. As a result, self care promptly deteriorated in the corporal's half of the platoon. The men became wet and cold. On the morning of the fourth day, two of the men began shivering uncontrollably and were sent by the observers to the medical monitor to rule out exposure. The medical monitor, a Captain in the Royal Army Medical Corps, had little previous field experience, and had never seen exposure. This physician saw that the men were wet and cold, and despite normal rectal temperatures, withdrew them from the exercise. Over the next several hours six more men from the corporal's section began shivering and were sent to the medical monitor who withdrew them from the exercise. At this point, the battalion headquarters became aware of the escalating loss from this platoon and changed the evacuation procedure. From then on any man shivering was sent to the battalion headquarters where he was given dry clothes, a hot drink, and set to work under shelter. Once the man was warm and his spirits improved he was sent back to his platoon. Subsequently, several more men were thought to have early

exposure and were sent to the battalion headquarters, warmed up, cheered up, and sent back to their unit. With the new evacuation procedure, the flow of men with possible exposure decreased and then stopped. The platoon sleeping one and one half hours each night lost half of its strength through this evacuation syndrome before it was checked. All the men lost were from the half of the platoon not under the direct supervision of the platoon commander. The platoon lost no further personnel during the remainder of the exercise.

The evacuation syndrome in Early Call I clearly illustrates the salient characteristics of such syndromes. The cause is often failure of leadership or some other blow to morale. A contributing factor is inexperienced medical personnel who, on inadequate grounds, evacuate personnel to the rear. There is usually some element of truth in the soldier's complaint, but treatment short of evacuation is in order. An initial trickle of men becomes a torrent once the route of evacuation and the symptoms necessary to take it become clear. Command must intervene to re-route evacuation through command as opposed to medical channels and to restore morale. Thus, personnel with an evacuation syndrome should be treated as combat psychiatric casualties, that is treated quickly, far forward - with rest, warm food, dry clothes, and encouragement, and they should be returned to their units as rapidly as possible. Similar evacuation syndromes probably occur in other field training exercises. They could provide both medical and line personnel with excellent opportunities for training in the identification and treatment of evacuation syndromes in field exercises and in combat, and, since they are similar to psychiatric casualties, in the treatment of psychiatric casualties in combat as well. In a like manner to psychiatric casualties, the occurrence of an evacuation syndrome indicates a failure in leadership, morale, and/or cohesion, a naivete in medical personnel, and it points to needed improvements in these areas to prevent evacuation syndromes in future field training exercises, and to prevent both evacuation syndromes and psychiatric casualties in combat.

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**Trip Report**

**Fifteenth Annual Anglo-American Psychiatry Conference**

**London, England**

**October 6-9, 1980**

**and**

**Visit to the Army Personnel Research Establishment**

**Ministry of Defence**

**Farnborough, England**

**October 12-13, 1980**

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**Fifteenth Annual Anglo-American Psychiatry Conference**

The conference brought together military mental health personnel from Australia, Egypt, Germany, Holland, Israel, the United Kingdom, and the United States. The papers presented confirmed previous findings and extended them. Of particular interest was the paper presented by Brigadier General ElSudany AlRayes describing the Egyptian experience in the 1967 and 1973 wars with Israel. Both the Israelis and the Egyptians had high rates of psychiatric casualties when they were fighting a failing defensive battle. The Egyptians had high rates of psychiatric breakdown in 1967 and the Israelis had high rates of psychiatric breakdown in 1973. Also of great interest was a paper presented by Mr. Christopher Donnelly indicating that the Soviets are keenly aware of the factors predisposing to psychiatric breakdown and related states of ineffectiveness in combat, and that they plan, both tactically and strategically, to maximize the likelihood of such ineffectiveness in the enemy while minimizing it in their own troops.

In general, the conference was excellent. The speakers were varied and good. The organization was efficient. Several line officers of the British Army of general officer rank attended.

Our Israeli colleague, Dr. Shabtai Noy summarized the Israeli experience in the 1973 Arab-Israeli War as he has done for us here at WRAIR. His paper complemented the paper by the Egyptian, Brigadier General ElSudany AlRayes, on the Egyptian experience with psychiatric casualties in 1967 and 1973 (see below).

Dr. Frederick Manning, MAJ MSC USA, of the United States Army Medical Research Unit Europe (USAMRU-E) presented his and Dr. Larry Ingraham's work on the importance of unit cohesion on military performance in peacetime.

Dr. Francis Caddigan, COL MC USA, who is replacing Dr. Merle Thomas as the U.S. Army Medical Liaison Officer in the United Kingdom, presented a paper on the psychological consequences of attack with chemical weapons.

In my paper, I presented an analysis of the effect of continuous combat including the use of chemical and nuclear weapons on the prevention and treatment of psychiatric casualties in combat.

Brigadier General ElSudany AlRayes served with the Egyptian Army in both the 1967 and the 1973 wars with Israel and in the war in Yemen. According to Dr. ElSudany AlRayes, Egyptian military psychiatrists have concluded that traumatic war neurosis is a distinct syndrome with a specific treatment. In their view, the syndrome has two stages - acute and chronic. The acute stage is characterized by anxiety, irritability, restlessness, startle to noise, aggressiveness, hysteria, clouding of the sensorium, and fugue states.

In the acute stage a traumatic event frequently acted as a precipitant. In the 1967 war, this precipitant was usually an air attack. Egyptian soldiers were under constant attack by Israeli Air Force and had no anti-aircraft weapons and no shelter. A prominent symptom was startle reaction to noise. In contrast, in Yemen there were few artillery or air attacks hence little evidence of startle reactions to noise. In Yemen, however, Egyptian soldiers frequently witnessed comrades being killed and mutilated and they were often subjected to night attack. As a consequence, fugue states and amnesia were common. In the first ten days of the 1973 war, Egyptian psychiatric casualties were less severe and less frequent than expected. After the 10th day, concurrent with the Israeli crossing of the Suez canal, psychiatric casualties increased in number and in severity. In the Egyptian view, it is the position of the defense which is traumatic.

In the chronic stage of traumatic war neurosis, insomnia, in the form of difficulty falling asleep, was a universal symptom. Relatively specific startle reactions and aggressiveness were common, especially toward family. Impotence as a mono-symptomatic complaint, not associated with anxiety or the taking of medications, was also common. In general, with treatment and with the passage of time there was marked improvement in all of these symptoms.

Delayed psychiatric breakdowns were also observed by the Egyptians. These occurred in two ways. Wounded soldiers whose wounds had healed and who were being returned to the front broke down on their way back to their units. In 1967, soldiers who had successfully retreated across the Sinai, under intense pursuit by Israeli air and armor, would break down on reaching the safety of the west bank of the Suez Canal. These delayed combat reactions appear to be a spontaneous decompensation in comparative safety.

The Egyptians reconfirmed in their own experience the importance of early treatment by a respite near the front with a

rapid return to the combat unit. Depending upon the type of battle and the theater of operations, such treatment was not always possible. In 1967, there was little early treatment on the Egyptian side and thus many soldiers failed to recover. In 1973, as a result of better preparations, soldiers with acute traumatic war neurosis were treated within a few hours of breakdown, and such treatment produced a high rate of successful return to duty.

The Egyptians have concluded that the following factors contributed to their high incidence of casualties in 1967. The immediate cause was the proximity of death or injury in a situation that was otherwise traumatic. The highest incidence of psychiatric casualties was in soldiers who were in a failing defensive battle. This was particularly true of men who were subjected to enemy fire and were helpless to protect or to defend themselves. Factors which augmented the effects of helplessness in a defensive battle were poor leadership, lack of a sense of belonging to a well knit group, lack of conviction of the importance of the battle, and low morale.

Chastened by their experience in 1967, the Egyptians prepared for 1973 by placing mental health officers at the battalion level; by improving leadership and cohesion; and by training soldiers in an atmosphere which simulated, as much as possible, true combat conditions. These measures, they felt, contributed to the reduced rate of psychiatric casualties in 1973.

Mr. Christopher Donnelly is a reader in Soviet studies at Sandhurst. He is fluent in Russian. He travelled extensively in the Soviet Union until finally he was expelled by the Soviet government as an undesirable. In his paper, Mr. Donnelly attempted to see the battlefield through Soviet eyes.

According to Mr. Donnelly, the Soviets place great emphasis upon assessing the mental state of their soldiers especially the commanders. In their exercises and combat modelling, they make a strenuous effort to understand what happens cognitively and psychologically and they make every attempt to improve the outcome. This accounts for 50% of their planning.

Mr. Donnelly dwelt at length on the qualitative aspects of the Russian mind. He pointed out that the Russians have endured dictatorship for centuries, and that even now 2/5 of the Russian population is peasantry. Also, the severe climate effectively isolates large sectors of the population with resultant problems in movement and communication. All these contribute to and condition the Russian view of the world.

Mr. Donnelly continued as follows:

In general, the Russians accept force and coercion as necessary and react positively to the effective use of force. Their attitude toward the west is one of inferiority and resentment with regard to material standards and technology, and at the same time they feel spiritually superior.

The cycle of the Russian harvest is similar to the cycle of military activity in war. There are short, critical periods of intense activity followed by long periods of enforced, legitimate idleness. Thus the rhythms of civilian society reinforce and support the military activity required during peace and during



mobilization for and prosecution of war.

Soviet military doctrine is in constant evolution. Although there is a right and a wrong way to conduct any given operation, the correct option is constantly tested and refined in exercises. Much training is focused on the decision in combat between a number of possible options in the light of the goal of the operation when using imperfect intelligence as to enemy disposition, intentions, and capabilities.

Military personnel involved in planning in the Soviet Union are typically more specialized than their American counterparts. They hold fewer positions throughout their careers and are assigned to one job for five years at a time. This allows them to develop considerable expertness in their areas. Still, there is a general lack of initiative in the Soviet system.

In the Soviet military, specialization is present throughout the ranks. The Soviet Army is 80% conscript. Every six months there is a 25% turnover in personnel. This necessitates a high degree of specialization in the junior enlisted ranks with little cross-training.

The Soviets see many factors critical to decisive victory in contemporary war. The complexity of modern war makes it important to impair the performance of the enemy by degrading his command, control, communication, and intelligence (C3I) at all levels. Mobility coupled with speed of maneuver allows the penetration in depth of forces to capture nuclear means, C3I, airports, and fuel. The capacity of enemy soldiers can be reduced by the increased range of threats to life, the increased noise, and by the use of continuous combat operations. Further, operations in the enemies rear areas will deprive enemy soldiers of the opportunity for rest and reorganization. Surprise, a vital factor in past wars, is even more important when weapons of mass destruction are used. In contemporary war there is a closer relationship between tactical failure and strategic failure than obtained in the past, and the two synergise to a much greater degree. Increased speed of communication and greater volume of intelligence data place larger demands for rapid and sophisticated integration of data by command and control. Chemical and nuclear weapons make possible the destruction of command and control even in rear areas. These factors are considered at every level of planning. Also closely studied are the vulnerabilities of NATO. Soviet tactics are designed to exploit them. The Soviets scrutinize their own procedures so as to identify their own vulnerabilities. They consider vulnerabilities at the psychological, the technical, and the tactical levels.

In terms of psychological vulnerabilities, the Soviets recognize not only the military, but the psychological advantages of surprise. Through nuclear and chemical attack the Soviets plan to produce panic and instability throughout the depth of NATO's deployment. There will be no safe areas.

On the operational level, the Soviets plan high rates of advance and rapid penetration to the rear. Through maneuver, they will temporarily concentrate their forces to break through the enemy along avenues prepared by chemical and nuclear strikes. First echelon forces will bypass the defenders to make rapid penetrations.

There will be widespread use of deception. The pressure will be maintained and NATO forces will have no opportunity to rest and reorganize.

Tactically, the Soviets rely on surprise, nuclear and chemical weapons, flame throwers, and rapid maneuver to force the engaged enemy units to abandon their defensive plan and to counter-maneuver.

When the Soviets speak of concentration of forces they include all types of indirect fire; conventional, chemical, and nuclear. Fire will be brought to bear by any and every means. Chemical and nuclear weapons will produce sufficient death and destruction to allow the relatively dispersed (nuclear-configured) Soviet armor and mechanized infantry to advance. By means of indirect fire, the Soviets plan to produce a 25% loss of equipment, and a 100% loss of the ability to use the equipment. Because of the effectiveness of NATO anti-tank weaponry, the Soviets hope to suppress, completely, remaining NATO units by a final conventional barrage coming just ahead of advancing Soviet units. The barrage would last 6-7 minutes and would land a 100 to 180 rounds upon each NATO platoon. At the end of this barrage, the Soviets expect NATO forces to be in a state of shock. They estimate, that following the end of the barrage, a machine gunner will be ineffective for 45 seconds, an anti-tank gunner for 1 and 1/4 minutes, and a tank gunner for 3-5 minutes. The intensity of the barrage would produce a physical casualty rate of only 10%. But the defenders would be deafened and stunned so that they would not be able to react while the Soviet units slipped by. The Soviets plan to exploit these brief time intervals to bypass the defenders without engaging. They calculate in terms of shock not death. They would terminate the barrage with a salvo of rockets and would advance with smoke and flame throwers to maximize this shock. The Soviets plan to exploit the stress, uncertainty, and lack of rest; and through a concentration of weapons render the defenders helpless enabling Soviet mechanized units to pass through the defense without engaging.

The Soviets recognize that they must prevent similar phenomena in their own soldiers. This means not being taken by surprise and therefore necessitates pre-empting NATO's deployment. Also it means political indoctrination to inculcate in their soldiers a belief in the rightness of their cause and to insulate the population of Russia, as a whole, from the influence of the west. Finally, it means a strong emphasis on command and control. Through automation, algorithms, and critical path analysis the Soviets have attempted to provide their commanders, at all levels, with the ability to make the correct decision in the noise, confusion, and danger of the chemical and nuclear battlefield. Their intent is to reduce the impact of the battle upon their own troops while maximizing it upon the opposition. The Soviets also categorize their soldiers according to psychological type and attempt to assign them to duties which will enhance their resistance to stress. They simulate battle as closely as possible and subject to criticism any failures in the conduct of an exercise, including those of general officers. The Soviets recognize that interpersonal bonds form in most groups, and through constant political supervision, they attempt to shape these ties to serve the ends of the Soviet military.

With respect to the algorithms of combat, the Soviets use critical path analysis to reduce tactical problems to pictorial

form. This leads to what they call a dynamic stereotype: an algorithym for making decisions in the face of inadequate data with a high probability of being correct.

The Soviets view battle as 50% movement and maneuver. They are anxious to insulate their soldiers against the stress of combat, and, therefore, emphasize the need for sleep, and the need for soldiers to join the battle well rested. Thus sleep discipline is rigidly enforced. Exercises include planned rests and planned halts. Biorhythm charts are kept for transport personnel, and there are no scheduled movements between 0200 and 0500 hours.

In summary, Mr. Donnelly indicated that the Soviets are keenly aware of the psychological factors in battle. They emphasize the importance of command and control and adequate rest. In their planning they attempt to minimize the psychological stress of combat in their own soldiers and maximize it in the opposition.

The papers by Brigadier General AlSudany ElRayes and Mr. Donnelly improve our perception of psychiatric casualties in a possible high intensity war. The Egyptian experience confirms the value of immediate treatment near the front with a rapid return to combat duty in the management of psychiatric breakdown in combat. It supports previous findings that psychiatric casualties are highest in soldiers fighting a failing defensive battle, and that contributing factors are poor leadership and inadequate unit cohesion. It is clear that the Soviets are aware of these facts. Consequently, they intend, in the event of war in Europe, to seize the initiative and, through surprise and concentration of chemical, nuclear, and conventional fire, force NATO into a failing defensive battle. These tactics are designed to maximize those factors promoting psychiatric breakdown in NATO forces and to minimize these factors in Soviet troops.

In general, the conference was valuable and in particular the two papers summarized above were of great interest. The papers by Dr. Noy, Drs. Manning and Ingraham, and the other presenters complemented the two that I have summarized here. Thus the conference program was varied, balanced, and interesting.

#### Visit to the Army Personnel Research Establishment

During my visit to the Army Personnel Research Establishment (APRE) of the British Ministry of Defence, I met with my colleague, Dr. Diana Haslam, who conducted the British sustained operations studies, Exercise Early Call I (in which I participated as U.S. Army Liaison Officer), and Exercises Early Call II, and III. The (APRE) conducts human factors research for the Ministry of Defence, and as such, combines the functions of our Division of Neuropsychiatry, WRAIR; ARI; and USARIEM. Dr. Haslam described new findings from Early Call II. To review previously reported findings, in Early Call II, British soldiers engaged in simulated continuous combat for 10 days. For the first 90 hours they were

deprived of all sleep. Subsequently, they were allowed four hours of sleep each night for the remaining 6 days of the exercise. The soldiers became militarily ineffective after 36 hours without sleep. Of great interest, however, was the finding that cognitive performance improved significantly after the first 4 hour night of sleep and continued to improve thereafter. In fact, cognitive performance returned to near baseline levels by the third day of 4 hours sleep each night. These data indicate that 4 hours sleep each night is adequate to sustain effective military performance, and that even after prolonged sleep deprivation, 4 hours sleep each night is of great restorative value. The new results described by Dr. Haslam pertained to the EEG telemetry from the study. This telemetry was analysed by Dr. Haslam and Lt. Col. (Dr.) Peter Abraham of the Royal Army Medical Corps. The results of this analysis supported the behavioral findings described above. The EEG telemetry confirmed that the men were sleep deprived for the first 90 hours of the exercise. The first 4 hour night of sleep was almost entirely stage 4 sleep with little REM or stages 2 and 3 sleep. On subsequent 4-hour nights of sleep, the amounts of REM and stage 4 sleep approximated control levels with stages 2 and 3 still markedly reduced. The return to near control levels of stages 4 and REM correlated with the return of cognitive performance to near baseline levels. Following sleep deprivation, sleep appears to become more efficient, and this increase in efficiency could perhaps account for the improvement in cognitive performance seen following even limited recovery sleep.

Dr. Haslam and I discussed the possibilities for future research. At my suggestion, Dr. Haslam is considering the use of L-DOPA as a performance enhancer during continuous combat. L-DOPA is almost certain to improve performance on cognitive tasks in both well rested and fatigued subjects. In low doses (i.e. 250mg a day), it is unlikely to impair the ability to sleep. There should be minimum let-down upon discontinuation of the drug. These latter two properties give L-DOPA an obvious advantage over amphetamines and similar stimulants. The critical question is whether judgment in the broad sense will be impaired or enhanced by L-DOPA. Like amphetamines, L-DOPA in sufficiently high doses will produce a mild manic state in normal subjects. In such a state, cognitive performance and memory measured by structured tests is improved, but judgment in less structured situations is impaired. The issue for the use of L-DOPA in continuous combat is ultimately the issue of military judgment. Would L-DOPA improve judgment in fatigued command and control personnel under conditions of continuous combat? Dr. Haslam and I are corresponding on the design of a study to answer this question.

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